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Alphabetical List of **NEW PRODUCTS**

Developed Since November, 1957

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WITH the co-operation of manufacturers of dyestuffs, textile chemicals, and wet processing and laboratory equipment, we have prepared the accompanying list of products which, it is understood, have been placed on the market or further developed since November, 1957. The list of products has been subdivided according to the classifications mentioned and the individual products are listed in alphabetical order by company.

We have tried to make this list as complete and accurate as possible but there may be some unintentional omissions or errors. If so, we shall be pleased to have such matters brought to our attention immediately. We have depended upon the manufacturers to supply us with a complete list of their new products together with information concerning them. The properties claimed for these products are those claimed by the manufacturers. The information which we publish is necessarily in a brief form inasmuch as lack of space prohibits the publication of complete details concerning any product. We hope, however, that the information as it appears is sufficiently comprehensive to give the reader a specific idea of the properties and intended uses of the product.

COLORING MATERIALS

ALLIANCE CHEMICAL CORP
33 Ave P
Newark 5, N J

Azoene Dustless Fast Color Salts and Bases

These new additions to the Azoene Dustless line of products are said to bring to the user a major advance in ease and safety in handling by reducing dusting and providing instant wetting. In addition, the Azoene Dustless Fast Color Salts and Bases are said to be more stable in storage than the average dustless types.

Salts

Azoene Dustless Fast Scarlet 2G
Azoene Dustless Fast Scarlet R
Azoene Dustless Fast Red 3GL
Azoene Dustless Fast Blue BN
Azoene Dustless Fast Blue BB
Azoene Dustless Fast Violet B

Bases

Azoene Dustless Fast Red KB
Azoene Dustless Fast Scarlet RC

Azogen Printing Black D

This azoic printing black solution will provide very low cost blacks greener in cast than Azogen Printing Black RM-10. In many other respects its properties are similar to Azogen Printing Black RM-10.

Azogen Printing Black RM-10

An azoic printing black solution of good yield providing an inexpensive black slightly on the green cast. Among its outstanding properties are said to be the ability to be readily shaded either red or blue, superior fastness to formaldehyde permitting its use with pigment fall-ons, little or no shade change under resin finishes, and excellent storage in drums and in print paste.

Azogen Printing Scarlet RR Solution

An extremely economical azoic printing color, more yellow than Azogen Printing Scarlet R. It is stated that the shade is not generally obtainable with the standard scarlet types. The color is said to be fast breaking and develop full and true shades with short aging times.

Dianisidine (Azoene Fast Blue B Base)

An important intermediate available as a clean, crystalline, nondusting product, suitable for use as a Fast Color Base in dyeing and printing as well as the manufacture of dyes and pigments.

Dichlorbenzidine (3, 3′ dichlorbenzidine dihydrochloride)

A new source of this valuable base now available to manufacturers of dye intermeditates and pigments.

AMERICAN CYANAMID CO
DYES DEPT
Bound Brook, N J

Azo Scarlet Y Ex Conc

This non-dusting dye, with excellent dispersion and solubility characteristics is said to have the best all-round working properties of the many colors used in the fine paper field. It is claimed to be the automatic choice wherever pink or bright scarlet shades are desired in manifold, bond, writing, text, cover, envelope and tablet papers. It is said to have the best light stability of the red dyes now used by the paper industry and has good stability to chemicals. Because it is bleachable, it makes broke handling relatively easy. It can be added directly to the beater or pulper without danger of color specks and with assurance of uniform color development. It is stated that it is level dyeing, non-feathering and shows a minimum tendency towards two-sidedness. It is said to have the advantage over other acid scarlets of being suitable for correction additions late in the mixing cycle or in the chest.

Calcofast* Neutral Black BG

This metallized dye is applicable to wool, silk or nylon by neutral or slightly acid dyeing procedures or by suitable printing methods. Contrasting shades can be cross-dyed on cotton, viscose and acetate effects where the light staining of these fibers by the black dye does not interfere, or when the stained fibers can be sufficiently cleared before cross dyeing. Solid shades can be produced on wool/nylon mixtures because of the good affinity this dye has for nylon. This dye is said to have excellent fastness to light, Wool Wash Test No. 3 and Fulling Test No. 2.

*Trademark

Calcofast* Neutral Blue B

This metallized dye is recommended by the manufacturers for self shades and for shading gray shades on wool, silk or nylon. It is also suitable for printing on these fibers. While it does not leave acetate, Arnel, Dacron and Orlon 42 sufficiently unstained for white effects, it does permit certain cross-dyed effects on these fibers. Light fastness is said to be good on wool and fairly good on nylon. It is further said that it has excellent fastness to Wool Wash Test No. 3 and Fulling Test No. 2 and it withstands carbonizing satisfactorily. Cotton or viscose effects are heavily stained.

*Trademark

Calcofast* Neutral Brown B

A metallized dye which is recommended for dyeing and printing wool, silk or nylon. Cotton or viscose fibers are left sufficiently unstained for white or cross-dyed effects. This dye is a good basis for tans and taupes as well as browns.

*Trademark

Calcofast* Neutral Brown 5R

A Cyanamid specialty which is redder and brighter in shade than other neutral dyeing browns. It is applied to wool or nylon by neutral or slightly acid dyeing procedures or by suitable printing methods. Under suitable conditions, it will dye certain acrylic fibers Ths dye exhausts at a moderate rate—hence, dyes levelly with greater ease than most neutral dying metallized dyes. It is said to be faster to carbonizing than any matching shade produced with a combination of neutral dyeing colors.

*Trademark

Calcofast* Neutral Orange 2G

A Cyanamid specialty which is a metallized dye for application to wool, silk or nylon by neutral or slightly acid dyeing procedures or by suitable printing methods. Under suitable conditions, it will also dye certain acrylic fibers. This dye is non-dusting, wets readily, has good solubility and the content of insolubles is very low. With proper control of the dye bath pH, it exhausts slowly and dyes levelly.

*Trademark

Calcofast* Neutral Red 6B

This metallized dye is applicable to wool, silk or nylon by neutral or slightly acidic dyeing procedures or by suitable printing methods. Under suitable conditions, it will also dye acrylic fibers. It is stated that the brightness of shade, wettability, concentrated solubility characteristics, low insoluble content and non-dusting qualities are noteworthy for this type of dye. With proper control of the dye bath pH, it exhausts slowly and dyes levelly.

*Trademark

Calcofast* Neutral Yellow G

A metallized dye which is applicable to wool, silk or nylon by neutral or slightly acid dyeing procedures or by suitable printing methods. Under suitable conditions, it will also dye certain acrylic fibers. It is stated that the brightness of shade, concentrated solubility characteristics, good wettability and very good non-dusting properties are particularly noteworthy in this Cyanamid dye.

*Trademark

Calcofast* Neutral Yellow 3R

A metallized dye which is applicable to wool, silk, or nylon by neutral or slightly acid dyeing procedures or by suitable printing methods. Under suitable conditions, it will also dye certain acrylic fibers. It is stated that light fastness is excellent on wool, very good on spun nylon and fairly good on filament nylon and that wet fastness properties are very good on wool, silk and nylon. With proper control of the dye bath pH, it exhausts slowly and dyes levelly. This dye is also useful for producing level surface shades on all kinds of leather.

*Trademark

Calcofast* Spirit Blue THN

This spirit-soluble derivative of copper phthalocyanine is said to be characterized by high tinctorial power, outstanding fastness to light, excellent solubility in glycol-type solvents and practically complete freedom from extraneous contaminants. A major use of this dye is in ink formulations for ball-point pens where its high solubility in Carbitol, butylene glycol and propylene glycol is of great value. Also valuable is the low moisture content, the good stability in ink formulations and the fact that suitable ball-point ink formulations have the desired viscosity characteristics. It is also suitable for alcohol inks, alcohol stains, tinting lacquers for foils and for coloring lacquer-based leather finishes.

*Trademark

Calcofluor* White EDT Solution

This product for cellulosic fibers has the valuable property of a slow rate of exhaust, and it is, therefore, recommended by the manufacturers particularly for application by padding and for package dyeing. It is compatible with starch and polyvinyl acetate finishing baths and with resin finishing baths. Good brightening effects are secured with from about 0.05% on the weight of the fiber for bleached cotton up to about 0.25% on the weight of the fiber in resin finishing.

*Trademark

Calcoflour* White NP Solution

This brightener for paper is designed to meet specific operating conditions in the fine paper field. It exhausts slowly and levels well. It is said to be particularly adaptable for the production of fluorescent whites in bond, envelope, cover, board, offset and coated grades. It is applicable to beater coloring, size press operation or incorporation in the coating color.

*Trademark

Calcofluor* White GW

A brightener which gives a greenish shade of white on nylon, acetate or Orlon. When redder shades of white are desired, it is used with Calcofluor White RW. The maximum concentration on the fiber should not exceed 0.04%, as higher concentrations first give too green and finally too yellow tones. It is applicable from acid or neutral baths and, if the temperature is properly controlled, at an alkaline pH. It is applicable with cationic softeners. Stock solutions are prepared in formic acid, methyl, ethyl or isopropyl alcohol or in Deceresol Wetting Agent NI Conc.

*Trademark

Calcogene* Black 6GFC Solution

This very green shade of sulfur black in solution form has an extremely low insoluble content and is, therefore, especially suitable for application by continuous padding methods and in circulating pressure machines, as well as in skein, warp, jig or beck dyeing. Very heavy black shades can be dyed, which are said to possess very good fastness to washing and crocking. This solution type of dye is easily measured volumetrically or gravimetrically at the point of use, directly from the shipping drum. It is recommended that the dye bath be primed with ½ ounce of sodium sulfide per gallon, prior to the addition of the dye solution.

*Trademark

Calcogene* Blue 2GFC Solution

Calcogene Blue 2GCF Solution gives a greenish shade of blue and is widely used alone or in combination with Calcogene Blue 6RCF, Black 6GCF, Black 5GCF, Black GXCF and Black RBCF Solutions for producing navy shades said to be of good fastness at low cost. It is applicable to stock and yarn in pressure circulating machines and to cloth by jig dyeing or by continuous dyeng methods. It has a very low insoluble content. The ease of using this solution by volumetric or by gravimetric measurement, as is, without adding other chemicals, is a boon to the busy dyehouse.

*Trademark

Calcogene* Blue 2GFC Solution

This sulfur dye solution is said to be of particular interest to stock, package, cheese and beam dyers and for the continuous dyeing of cloth because of its very low content of insolubles, because it eliminates the bother of dissolving a powder type, and because it can be measured volumetrically. It produces an attractive golden yellow self shade on cotton, viscose or linen and is a useful shading component for tans, browns and greens. Because of its low price, Calcogene Yellow SCF Solution is used for low cost denims, corduroys and bed tickings.

*Trademark

Calcoloid* Brilliant Orange RK Single Paste

This product gives a bright reddish-orange shade said to possess excellent fastness properties. Fastness of full shades to outdoor sun and weather exposure is said to be outstanding and this dye is widely used for awnings, lawn furniture, beach umbrellas and similar purposes. This vat dye is marketed as a free-flowing, non-settling, non-drying, non-specking paste with controlled particle size and with excellent pigment and leuco filtration characteristics. It is very level dyeing and is applicable to cotton, viscose and linen at all stages of manufacture and in all types of equipment.

*Trademark

Calcoloid* Direct Black 2RC Double Paste

This direct dyeing vat black is a homogeneous dye and it does not require an extra development treatment. It is a free-flowing, non-settling, non-drying, non-specking paste with controlled particle size and with excellent pigment and leuco filtration characteristics, and it is formulated to give optimum results in pigment-pad dyeing methods as well as in stock, beam, package and other forms of dyeing. It is widely used as a basis for gray shades where low dye cost is a major requisite, as well as for full black shades.

*Trademark

Calcoloid* Fast Yellow 6GL Single Paste**

A new, patented, homogeneous vat dye, said to be outstanding and unique because it

*Trademark **Patented

combines very good light fastness with a bright greenish-yellow shade. On viscose rayon, the light fastness is said to be excellent. It is stated that it has excellent fastness to mill processing and to all the normal end use destructive influences, except exposure to combined sun and weather. It is a very level dyeing color and is applicable to cotton, viscose, linen and certain other fibers at all stages of manufacture and in all types of equipment. Using suitable procedures, acetate is left virtually undyed in fiber blends. Viscose rayon dyes slightly heavier than cotton, but on tone. A good union can be secured on viscose-wool. It is a free-flowing, non-settling, non-drying, non-specking paste with excellent filtration characteristics.

Calcoloid* Gray 2BC Double Paste**

This patented vat dye yields a more neutral shade of gray than the popular and time-tested Calcoloid Gray 2G. It is said to possess the same fine dyeing properties and the same excellent fastness properties. The free-flowing, non-settling, non-drying and non-specking paste with controlled particle size is formulated to give optimum results in pigment-pad dyeing methods as well as in stock, beam, package and other forms of dyeing. It has excellent pigment and leuco filtration characteristics.

*Trademark
**Patented

Calcoloid* Navy Blue 2GC Double Paste

This product, giving a greener shade than Calcoloid Navy Blue NTC, is said to be notable for its very good fastness to light in low percentage dyeings, for its resistance to shade change when subjected to hypochlorite bleaching, and for its very good leuco stability at high temperatures. When dyed material is dry cleaned, the solution is not stained pink as happens with certain other vat navy dyeings. This dye levels well and is applicable to cotton, viscose, or linen at all stages of manufacture and in all types of equipment. The general fastness properties are said to be excellent. It is a free-flowing, non-settling, non-drying, non-specking paste with controlled particle size and it is formulated to give optimum results in pigment-pad dyeing methods as well as in stock, beam, package and other forms of dyeing.

*Trademark

Calcoloid* Violet BNC Double Paste

This product is claimed to be outstanding among bluish vat violets because of its excellent fastness to heat effects such as ironing, pleating or drying and to moisture effects such as water spotting. These properties eliminate consumer complaints for failure in these respects, and quick and accurate shade matching is assured in the dyehouse. Even in pale shades, the fastness to light is very good. General fastness properties to consumer usage are said to be very good. A free-flowing, non-settling, non-drying and non-specking paste with controlled particle size, this dye is applicable to cotton, viscose or linen in all stages of manufacture and in all types of equipment. An important use is for shading pastel blue or gray shades.

*Trademark

Calcosol* Printing Orange RE Paste

This type of the well-known Vat Orange R is specially formulated to give optimum results by the new oil-in-water emulsion systems of printing.

*Trademark

Calcosol* Printing Pink FBE

This type of the well-known Vat Pink FB is specially formulated to give optimum results by the new oil-in-water systems of printing.

*Trademark

Calcosol* Printing Pink FFE

This type of the well-known Vat Pink FF is specially formulated to give optimum results by the new oil-in-water emulsion systems of printing.

*Trademark

Calcosol* Printing Scarlet BE

This printing scarlet is specially formulated to give optimum results by the new oil-in-water emulsion systems of printing.

*Trademark

Calcosol* Printing Scarlet 2BE

This bluish printing scarlet is specially formulated to give optimum results by the new oil-in-water emulsion systems of printing.

*Trademark

Calcosol* Printing Scarlet 2GE

This yellowish printing scarlet is specially formulated to give optimum results by the new oil-in-water emulsion systems of printing.

*Trademark

Calcosperse* Violet B

This is a dispersed dye, primarily for polyester fibers such as Dacron. Under suitable conditions, it will dye Arnel and Dynel with acceptable color yield. It is applied to Dacron either at temperatures just below or at 212°F with the aid of a carrier, or without a carrier at temperatures in the vicinity of 250°F. It is level dyeing, builds up well. It disperses easily and has good compatibility with carriers. When dyeing in circulating pressure machines, the cleanest and most level dyeings are produced if the dispersing agent, Deceresol 18, is present. If a temperature below 212°F is used, the carrier, Cyanate Dyeing Assistant EM, gives superior results.

*Trademark

Calcozine* Green MX Paste

This product, primarily for the paper trade, is a fluid paste type of Calcozine Green MX Conc and has the advantages of being non-dusting, rapidly dispersible and suitable for volumetric, as well as gravimetric, measurement. It is particularly recommended for kraft mills and other mills which utilize large amounts of dye. It is useful in the preparation of formulations for continuous coloring and calender coloring, as well as for the conventional beater and pulp additions.

*Trademark

Calcozine* Methyl Violet 4BPX Paste

This is a fluid paste type of Calcozine Methyl Violet 4BPX Conc, primarily for the paper trade. Advantages and applications are similar to those listed for the preceding item.

*Trademark

Helmerco* Blue MGW Paste
Helmerco* Blue M4G Paste

Helmerco Blue MGW Paste is a medium shade of blue and Helmerco Blue M4G Paste is a greener shade of blue. These paste types, for tinting whites, are more convenient to use than powder dyes in certain operations in the paper industry, such as beater coloring, the preparation of stock solutions, or addition to the coating mix.

*Trademark

Pheno* Fast Yellow APC

This improvement on the older Pheno Fast Yellow AP is a non-dusting, free-flowing, finely ground and dense powder for the paper industry. It has superior dry addition characteristics, gives better color value at low temperatures than the previous type and shows advantages also at the normal high temperatures encountered in some board mills. It wets out readily when added to the pulp or water and has little tendency to foam. It has satisfactory affinity for all of the normal paper making fibers and is compatible with all of the normal paper making procedures, conditions and chemicals.

*Trademark

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ARNOLD, HOFFMAN & CO, INC
55 Canal St
Providence 1, R I

Ahcocid* Fast Scarlet R

A homogeneous member of the level dyeing class of acid wool dyes. It gives bright yellowish scarlet shades said to possess high light fastness and good level dyeing properties. Cellulosic and acetate fibers and effect threads are left unstained. On nylon, it produces bright scarlet shades said to be of good wet and light fastness. Build-up is limited and only pale and medium strengths are recommended. Both wool and nylon fabrics dyed with Ahcocid Fast Scarlet R may be discharged to satisfactory whites.

*Registered trademark

Ahcovat* Dark Brown 2BR Double Paste

Characterized by medium substantivity, medium rate of exhaustion, fast reducing, high solubility, good build-up properties. Applied by Method II at 120°F.

*Registered trademark

Ahcovat* Printing Black 2R Double Paste

A specially standardized dye designed to have rapid fixation properties on cotton and viscose rayon when applied by the conventional potash-sulfoxylate method. It is stated that it is thus less sensitive to variations in reducing chemical concentrations in the print paste than many commonly used printing vat blacks. It is also less affected by adverse steaming conditions.

*Registered trademark

Ahcovat* Printing Blue GCD Double Paste

A homogeneous anthraquinone vat said to be well suited for production of bright shades where exceptionally good fastness to light and washing is required. Particularly recommended by the manufacturer for quality dress goods and drapery styles.

*Registered trademark

Ahcovat* Printing Brilliant Orange RK Paste

A bright reddish orange said to be of very good to excellent fastness and suitable for use as a self shade or in mixtures. It is stated that its light fastness is excellent, and it is ideal for drapery and upholstery fabrics. Ahcovat Printing Brilliant Orange has exceptionally fine printing properties.

*Registered trademark

Ahcovat* Soluble Grey IHL Powder

Produces an attractive neutral grey shade by normal printing or dyeing methods, building up on tone from very light to medium heavy shades. It is said to have generally very good fastness.

*Registered trademark

Monolite* Fast Green GVSA Paste

A homogeneous, "V" brand pigment paste having a total solids of 30 per cent. Gives bright green shades said to be of excellent fastness properties in the mass-pigmentation of viscose rayon. Its filterability and ease of dispersion are also said to be excellent.

*Registered trademark

Nylomine* Yellow GS
Nylomine* Orange GS
Nylomine* Brown B
Nylomine* Red 2BS
Nylomine* Scarlet B
Nylomine* Blue R
Nylomine* Dark Blue B
Nylomine* Blue GS

Specially designed for dyeing nylon and other polyamide materials as loose fibers, slubbing, yarn or piece goods and to produce bright shades of high light fastness on those fibers. Wet fastness properties are also said to be good and by a simple "back tanning" treatment excellent wet fastness is achieved. It is claimed that Nylomines are superior to disperse acetate dyes in both wet and light fastness, superior to acid dyes in covering irregular nylon, and superior to metallized dyes of the neutral dyeing type in brilliance. They are of limited interest for dyeing of acetate and polyacrylonitrile fibers, and they are not suitable for dyeing Dacron or cellulose triacetate. Nylomine dyes can also be used for printing on nylon where they provide a useful supplementary range to the acid and disperse dyes in common use.

*Registered trademark

Procion* Printing Green G
Procion* Printing Green 5B

For the production of bright shades of green on cellulosic fibers. They are said to possess good wet fastness and excellent light fastness, and fade on tone after long exposure. Both dyes may be printed on chlorinated wool and on silk. Stored print pastes are said to have excellent stability.

*Registered trademark

Procion* Red G
Procion* Brilliant Red 5B
Procion* Rubine B
Procion* Brilliant Blue H7G
Procion* Black HG
Procion* Scarlet G

New members of the Procion fiber-reactive range for the production of level, brilliant shades said to be of high light and wet fastness on cellulosic fibers and on silk. They may be applied to rawstock, yarn and fabric by conventional or continuous processes. Except for those containing an "H" in the suffix, the Procion dyes may be applied from cold (85—120°F) dyebaths; the "H" types should be applied at 185°F. The Procion dyes may also be applied to cellulosics and silk by the usual printing methods, for the production of equally fast and bright shades.

*Registered trademark

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BERKSHIRE COLOR & CHEMICAL CO
250 Delawanna Ave
Delawanna, N J

Durolan Fast Colors

Included under this designation are the following metalized acid dyeing types:

Durolan Fast Yellow N	**Pr 330**
Durolan Fast Yellow EL	**Pr 330**
Durolan Fast Bordeaux RM	**Pr 508**
Durolan Fast Navy REN	**Pr 332**

Durolan Neutral Yellow GLW
Durolan Neutral Red B

These neutral dyeing premetalized types are recommended by the manufacturer for the dyeing of both wool and nylon for the production of shades of exceptionally good fastness to light and to wet processing.

Durosperse Colors

These disperse dyes for acetate, nylon and synthetic fibers are claimed to have not only a high degree of chemical purity but also optimum conditions of dispersion. Included in this range are the following:

Durosperse Yellow CW	**Pr 625**
Durosperse Yellow GA	**Pr 242**
Durosperse Orange GRA	**Pr 43**
Durosperse Scarlet BA	**Pr 244**
Durosperse Red 2G	**Pr 236**
Durosperse Red R	**Pr 621**
Durosperse Pink BA	**Pr 234**
Durosperse Brill Blue B	**Pr 228**
Durosperse Blue BNN	**Pr 228**
Durosperse Blue BNJ	**Pr 618**
Durosperse Navy BR	
Durosperse Navy LB	
Durosperse Black EH	
Durosperse Black JET	

Padisperse Colors

It is claimed by the manufacturers that a unique method of preparation has enabled them to produce these colors in a form which is suitable for the padding of acetate and of nylon fabrics. Comparison of Padisperse colors with the conventional disperse types will show tremendous differences in filterability of their prepared solutons. The importance of this particular property is readily understood where, in padding, specking must be avoided. It is also claimed that the special method of compounding minimizes migration problems which are common drawbacks wth conventional disperse types. The range includes the following:

Padisperse Yellow GS New
Padisperse Orange 2RS New
Padisperse Orange 3RS New
Padisperse Scarlet BS New
Padisperse Red RS New
Padisperse Pink FS New
Padisperse Blue GS New
Padisperse Blue NS New
Padisperse Navy J New
Padisperse Black J New
Padisperse Brown J New

CARBIC COLOR & CHEMICAL CO, INC
451-453 Washington St
New York 13, N Y

Anthrasol Yellow 13R
(Carbic—Hoechst)

A new leucoester of a vat dye. The new dye is claimed to be by far the fastest to light yellow of the entire class. It is especially interesting for light shades. It can be used for dyeing and printing.

Hostaperm* Pigments
(Cabric—Hoechst)

A complete line of organic pigments, partly imported from Farbwerke Hoechst AG, West Germany, partly manufactured by Hoechst Chemical Corporation, West Warwick, R I, has been placed on the market by Carbic Color & Chemical Co.

The most important products of outstanding properties are:

Hostaperm Hansa Yellow G Powder
Hostaperm Hansa Yellow 10G Powder
Hostaperm Fast Yellow GR Extra Powder
Hostaperm Fast Yellow NCG Extra Powder
PV-Fast Yellow HR
Hostaperm Orange RN
Hostaperm Vat Orange GR
Hostaperm Fast Carmine FB Extra Powder
Hostaperm Fast Carmine FBB Extra Powder
Hostaperm Vat Red BL Extra Powder
Hostaperm Fast Red FGG Extra Powder
Hostaperm Fast Red FGR Extra Powder
Hostaperm Red GG Extra Powder
Hostaperm Vat Red Violet RH presscake
Hostaperm Vat Red Violet 2RN
Hostaperm Fast Violet RL Extra Powder

*Registered trademark

Remalan* Fast Dyes
(Carbic—Hoechst)

Remalan Fast Yellow EG
Remalan Fast Yellow ERR
Remalan Fast Orange ER
Remalan Fast Bordeaux EB
Remalan Fast Violet ER
Remalan Fast Blue ERR
Remalan Fast Brown EBR
Remalan Fast Brown EGG
Remalan Fast Brown EGR
Remalan Fast Grey ER

The Remalan Fast dyes represent a new type of metallized neutral dyeing dyes. While they possess approximately the same fastness to light as 1:2 metal complex dyes they are said to produce in general better wet fastness properties. Remalan Fast dyes can be used for wool piece goods, slubbing, yarn, and raw stock. They are fixed within a short dyeing time at a pH below 7. They can also be used on nylon and silk.

*Registered trademark

Remazol*†
(Carbic—Hoechst)

Remazol Yellow G
Remazol Yellow RT
Remazol Red B
Remazol Red 3B
Remazol Red Violet R
Remazol Brilliant Violet 3B
Remazol Brilliant Blue R
Remazol Black B

Remazols are said to be the only fiber reactive dyes which form a firm ester linkage with cellulose through an active vinylsulfon group. They fix quickly and can be washed quickly to the final shade on open-width scouring ranges. All Remazols are dischargeable to a white. Many are said to have outstanding fastness to light and are fast to chlorine. Remazols can be applied by printing and dyeing. Printing can be carried out with a neutral alginate thickening or with an oil-in-water emulsion thickening in the presence of sodium bicarbonate (Carbic C-581).

Dyeing can be carried out by the chemical pad steaming method, by the single pad steaming method, by thermofixation on the jig, on package machines etc. Resin finishing can be carried out with a minimum of degradaton of the light fastness by choosing the correct finish and catalyst (Carbic C-582). It is stated that Remazol dyes can also be applied to wool, nylon, and white silk with very good fastness to washing and light.

*Registered trademark
†Patented

CIBA COMPANY, INC
627 Greenwich St
New York 14, N Y

Benzyl* Fast Green F3G

Dyes an attractive yellowish green shade with good buildup in heavier depths on wool, nylon and silk in neutral or slightly acid dyeing. Good fastness to light and washing, similar to the Cibalan group. It is stated that the dye withstands top chroming and is very suitable for use with chrome or Cibalan dyes.

*Registered trademark

Chlorantine* Fast Blue 8GLL

The clean sky blue shade of this direct dyeing color on cellulosic fibers is said to show very good fastness to light and water. It is dischargeable with hypochlorite solutions. Tinctorial value and level dyeing properties are good. In addition to its interest for direct lightfast dyeings on cotton and rayon, the dye is said to give excellent results in dyeing fine papers, such as bond, ledger, mimeo and specialty tissues.

*Registered trademark

Cibacete* Orange DNA

It is stated that, besides its excellent light fastness, this new orange has sublimation fastness far above that of the average dispersed orange dye. Versatile in application, it offers a bright reddish orange shade on acetate, Dacron, nylon and Arnel. Fastness to washing and to gas fumes is said to be very good. Its use in fashion shades in many cases makes it unnecessary to resort to red shading dyes of poorer fastness to sublimation.

*Registered trademark

Cibacron* Black BG

This is the first straight black dye of the fiber-reactive type. An original Ciba product, it is said to combine a good jet black shade with the unusual dyeing and fastness properties of fiber-reactive dyes. It is particularly interesting in printing patterns, as it eliminates the need for using other type blacks in reactive-dye prints. The new dye is useful also for dyeing by pad-steam, pad-thermofix and exhaust methods. As a neutral black, it improves designing possibilities when using reactive dyes.

*Registered trademark

Cibacron* Brilliant Red B

An original Ciba product, this new fiber-reactive dye is said to offer an attractive medium red shade of exceptional brilliance and very good fastness. Its excellent color value and buildup is important in dyeings and prints on cotton, rayon and wool, and is especially interesting in printing. Besides its beautiful red self-shade, it is used for making bright fast pinks, scarlets and oranges. Top fastness and the simple Cibacron application methods further recommend this reactive dye for dyeing cellulosic and wool fibers.

*Registered trademark

Cibalan* Black 2BL

This new addition to the Cibalan group dyes a bloomy, bluish black shade said to be of exceptional light fastness on wool, silks and nylon. Fastness to wet treatments and to nylon heat setting at 210°F is said to be very good. Shows excellent color strength, and contributes to easier shade matching of fast blacks.

*Registered trademark

Cibalan* Black 2GL

A straight premetallized black with a greenish cast on wool, silk and nylon. It is said to be very fast to light; dyes woolnylon unions in simple neutral or acid-dyeing application; best used in shade matching of fast black.

*Registered trademark

Cibalan* Brilliant Scarlet RL

Said to be distinguished for its bright yellowish red shade and good all-round color fastness, the newest Cibalan dye adds an appealing and brilliant color to the series. Good

*Registered trademark

color value in neutral or acid dyeing of wool and nylon is obtained in exhaust application or in direct or Vigoureux printing. Stable in processing, the dye may be applied at all stages to wool and nylon.

*Registered trademark

Cibalan* Grey GLS

A premetallized neutral dyeing color of a pleasing medium-grey cast on wool, silk and nylon. It is stated that it has good leveling and penetrating properties, and is especially valuable for dyeing tertiary shades of tan, brown and grey. Characteristically high Cibalan shade fastness and union dyeing properties add to its interest.

*Registered trademark

Cibalan* Olive 2BL

A premetallized dye offering a bluish olive color in neutral dyeing of wool, silk and nylon, especially interesting for military shades. Level dyeing even on heavy fabrics, it is well suited for dyeing twills and serges. It is said to show excellent fastness to light and washing, very good fastness to carbonizing, fulling and milling.

*Registered trademark

Cibalan* Red Brown RL

The attractive reddish brown shade of this new fast dye on wool, silk and nylon is particularly interesting as a self-color, as a red component in fashion tones or as a base color for copper and rust shades. It is a straight dye said to be of outstanding light and wet fastness, applied by exhaust dyeing and printing at all depths of shade.

*Registered trademark

Cibanone* Brilliant Orange GR Paste

This new Microfined vat dye has an exceptionally clear, slightly reddish orange shade of good color value and buildup on cotton and rayon. It is stated that its strong all-round fastness properties are headed by its 250 hours or better light fastness in medium depth shades. Dyeings and prints by all regular vat methods of pigment and reduced dyeing, feature tangerine tones and related hues for dress goods, draperies and upholstery fabrics. Good coverage of dead cotton is obtained.

*Registered trademark

Cibanone* Brown 3B Double Paste

Presenting a smart medium brown shade, this new vat dye is said to feature excellent light fastness, high tinctorial value and strong build-up to heavier shades. It is well suited to dyeing goods to be treated with various "minimum care" resin finishes. It is stated that, high-lighted by better than 200 Fade-Ometer hours light fastness in medium shades on rayon, it offers also very good fastness to washing, crocking, weathering and to chlorine. Microfined properties promote level shades, while good color value of the slightly reddish brown shade is obtained in dyeing even at 180°F.

*Registered trademark

Cibanone* Green 6G Paste

An original product of Ciba Research, this new Microfined vat dye is said to feature good all-round fastness, with excellent fastness to light and weathering. It is one of the few synthetic dyes that exhibit low infra-red reflectance, making it interesting for miltary use, such as in camouflage prints. The brilliant yellowish green color dyes well with other Cibanone vat dyes to yield top fastness with brightness. Application is flexible, with particular suitability for pad-steam dyeing.

*Registered trademark

Cibanone* Grey 2GR Paste

This new lightfast Microfined vat dye, an original product of Ciba, is said to have very good leveling propertes and is particularly suited for dyeing packages and beams. Its slightly brownish grey shade on cotton and rayon is said to exhibit good all-round fastness, with very good fastness to light. Treatment with crease-resistant finishes has little or no effect on shade and fastness.

*Registered trademark

Coprantine* Orange 3GL

This new dye produces a bright yellowish orange on cotton and rayon by direct procedures and is said to possess very good fastness to light and good fastness to washing. It is suitable for application by exhaustion or pad dyeing, or by high temperature pressure methods. Is used to produce orange shades, as yellow component in browns, as dischargeable ground shade and for print-on styles. Dyeings may be treated with copper compounds for better wet fastness, and are unaffected by synthetic resin finishes.

*Registered trademark

Direct Black AWR

An economical direct-dyeing black, this dye is intended for use in dyeing blacks and navies (in combination with Chlorantine Fast Blue NBLL) on viscose rayon piece goods. It is said to offer good acetate reserve and light fastness, and to be suitable for resin finishing.

Direct Yellow P-CD
Direct Yellow P-RCD

These two new direct dyes offer bright medium yellow shades, and are alike in all dyeing and fastness properties except that Yellow P-RCD is slightly redder in tone. They are intended primarily for dyeing paper, particularly better grades, such as bond, ledger, offset printing and specialty wrapping. Fastness to light, to acid, and to alkali is said to be very good. Both dyes wthstand bleaching with hypochlorite solutions.

Oxanal* Fast Black GL

This straight black dye for anodized aluminum is superior in many respects to the usual black dye mixes. It offers a jet black shade, bluish green in very light depths which is said to possess excellent light and weathering fastness when applied in standard aluminum dyeing procedures. The color applies eveniy and is water sealed at the boil. On pure aluminum after anodizing, the dye gives consistently uniform results.

*Registered trademark

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E I DU PONT DE NEMOURS & COMPANY, INC
ORGANIC CHEMICALS DEPARTMENT
DYES AND CHEMICALS DIVISION
Wilmington, Del

Cationic Dyes

Sevron Brown YL

Sevron Brown YL produces rich, copper-brown shades on acrylic fibers that are said to possess outstanding lightfastness and very good fastness to wet processing conditions. It is particularly recommended by the manufacturers for use with other lightfast Sevron dyes for tan and brown shades with maximum lightfastness on Orlon type 42 acrylic fiber. This product is also suitable for dyeing the Orlon in blends of Orlon and wool. Sevron Brown YL can be used for printing fabrics of 100% Orlon or blends of Orlon and wool as it possesses good working properties, exhibits good buildup and shows good fastness properties.

It is stated that Sevron Brown YL has good solubility, exhibits good buildup properties and possesses good shade stability on the fiber when applied over the pH range of 4.0 to 10.0. Strongly acid dyebaths, below pH 4.0, result in somewhat weaker dyeings. It has a half-dyeing time of 25 minutes when applied at 1.0% strength to Orlon at 206°F. This value represents the time required to exhaust one-half the absorbable dye from a practical dyebath and is a convenient means of selecting dyes that will exhaust uniformly in compound shades. The use of Du Pont Retarder LAN and sodium sulfate is recommended by the manufacturers for producing level dyeings of this color. Dyeings of Sevron Brown YL become much redder and brighter in shade under incandescent light.

Sevron Brown YL possesses good affinity for Acrilan acrylic fiber and is said to show very good washfastness and very good lightfastness on this fiber. Its fastness properties on Acrilan are similar to those for Orlon. Sevron Brown YL can also be used advantageously on Creslan, Dynel and Verel. It is not recommended for use on acetate, nylon or silk.

Sevron Bordeaux G

Sevron Bordeaux G is a maroon dye with good buildup for use on Orlon type 42 acrylic fiber. It is said to have good fastness to light and wet processing and is recommended by the manufacturers as an economical component in making dark brown, wine and maroon shades. Sevron Bordeaux G is suitable for dyeing the Orlon in blends of Orlon and wool.

The shade of Sevron Bordeaux G is unaffected when applied to Orlon over the pH range of 3.0 to 6.0; pH values above 7.0 decrease affinity. Maximum exhaustion of this dye is obtained by employing a dyeing temperature as close to 212°F. as possible. Applied to Orlon at 206°F. in a 1.0% shade, Sevron Bordeaux G has a half-dyeing time of 32 minutes. The use of Du Pont Retarder LAN and sodium sulfate is recommended by the manufacturers as specified for producing level dyeings of this color. In incandescent light, dyeings of Sevron Bordeaux G become yellower and brighter in shade.

Sevron Bordeaux G possesses moderate affinity for Acrilan acrylic fiber and exhibits fair lightfastness on this fiber. It is not recommended for use on acetate, nylon or silk.

Direct Dyes

Pontamine Fast Yellow EFL

Pontamine Fast Yellow EFL is said to be an outstanding fast-to-light direct dye as it produces golden yellow shades on cellulosic fibers that possess very good lightfastness and good washfastness that can be further improved by resin aftertreatments. This dye is of special interest for use on rayon in connection with urea-formaldehyde type resin aftertreatments because of the excellent lightfastness and very good washfastness that are obtained. Pontamine Fast Yellow EFL is recommended by the manufacturers as a self-shade or in combinations with other resin-fast direct dyes for producing many popular shades on cotton or rayon dress goods, suitings, sportswear and other similar fabrics. Pontamine Fast Yellow EFL shows negligible stainting of nylon and is said to be particularly attractive for dyeing cellulosic fibers in blends with nylon that are intended for the production of automotive, upholstery and drapery fabrics.

Pontamine Fast Yellow EFL is said to have good solubility, dye levelly, possess good transfer properties and exhibit good buildup. It can be applied in all the customary types of dyeing equipment when dyed by methods normally used for direct dyes. Dyeings of Pontamine Fast Yellow EFL become much redder under incandescent light. This dye cannot be recommended for discharge work.

When used to dye cotton or rayon fabrics containing other fibers, Pontamine Fast Yellow EFL leaves acetate, Dacron polyester fiber, nylon and Orlon acrylic fiber virtually unstained and stains silk and wool only noticeably.

Pontamine Fast Orange DL

Pontamine Fast Orange DL produces yellowish-orange shades that are said to be highly resistant to the effects of resin treatments on cotton or rayon. This dye is of interest as a self-shade or as a shading component in compound shades for use on spun rayon in conjuction with resin aftertreatments. It is recommended by the manufacturer for dress goods, sportswear, suitings, upholstery and drapery materials and other fabrics for end uses requiring good fastness to light, washing and other color-destroying influences. Pontamine Fast Orange DL is especially suitable for automotive upholstery composed of cotton, rayon and nylon because it is said to exhibit only a slight staining of nylon and to yield dyeings possessing good fastness to light, crocking and perspiration.

Pontamine Fast Orange DL is said to have good solubility, dye levelly, penetrate well and exhibit good buildup on either cotton or spun rayon. It can be applied by padding and performs well in all the customary types of dyeing equipment when dyed by methods normally used for direct dyes.

On cotton or rayon fabrics containing other fibers, Pontamine Fast Orange DL leaves acetate, Dacron polyester fiber and Orlon acrylic fiber unstained, stains nylon only slightly and shows noticeable staining of wool and considerable staining of silk.

Pontamine Fast Gray 4BL

Pontamine Fast Gray 4BL is a fast-to-light direct dye said to be especially suited to the production of gray shades on cellulosic fibers that are to be resin treated. It is stated that it retains good lightfastness after resin treatment and is of special interest for use on rayon in connection with urea-formaldehyde type resins. This product exhibits negligible staining of acetate and nylon and is particularly attractive for dyeing cotton or rayon in blends with either of these fibers. Pontamine Fast Gray 4BL is recommended by the manufacturers for use on suitings, dress goods, sportswear, upholstery fabrics and other materials requiring good fastness to light, crocking, washing and other color-destroying influences.

Pontamine Fast Gray 4BL is said to have good solubility, dye levelly, penetrate well and exhibit good buildup on either cotton or spun rayon. Dyeings of this product become much redder and duller in incandescent light. Pontamine Fast Gray 4BL can be applied by padding and also performs well in all the customary types of dyeing equipment when applied by methods normally used for direct dyes.

When used to dye cotton or rayon fabrics containing other fibers, Pontamine Fast Gray 4BL shows negligible staining of acetate, Dacron polyester fiber, nylon and Orlon acrylic fiber, stains wool heavily and shows considerable staining of silk.

Disperse Dyes

Acetamine Dark Brown SF

Acetamine Dark Brown SF is a disperse type suitable for application to acetate and nylon. It yields a rich, chocolate brown in heavy shades that is said to be in demand for the production of various types of dress goods, linings, hosiery and drapery materials.

Acetamine Dark Brown SF is said to exhibit good general fastness, satisfactory dyeing properties and is suited to application in the jig where rapid exhaustion and good affinity at fairly low temperatures are required. It is not recommended for discharge printing.

Latyl Cerise N

Latyl Cerise N is a disperse dye developed especially for use on Dacron polyester fiber and also produces attractive bluish-pink shades said to be of good fastness properties on nylon, acetate, Orlon acrylic fiber and other hydrophobic fibers. It is recommended by the manufacturers for use either as a self-shade or as the red component in the production of grays, tans and browns and is of particular interest for producing light to medium scarlet shades on acetate and light bluish-pink shades on Orlon.

Latyl Cerise N exhibits good buildup on Dacron, dyes levelly and can be applied from aqueous carrier baths at 206° to 212°F. or under pressure at 250°F. without a carrier. Maximum lightfastness of dyeings made with orthophenyl-phenol as the carrier is obtained by subjecting dyed fabrics to a heat treatment for one minute at 380°F. to remove residual carrier. Latyl Cerise N is not a completely non-subliming dye, being similar to Latyl Cerise B in this respect, and should not be used where optimum sublimation fastness is a critical factor. This new product can be used for dyeing the Dacron in blends of Dacron and wool as it stains wool only slightly in medium to full shades.

In addition to the fibers mentioned, Latyl Cerise N can be used advantageously on Saran, Arnel cellulose triacetate fiber, Acrilan acrylic fiber, Verel modified acrylic fiber and Darvan dinitrile fiber.

Celanthrene Navy Blue BPF

Celanthrene Navy Blue BPF is a disperse dye that produces bright shades of deep, reddish blue on all forms of acetate and nylon. It is said to possess generally good all-round fastness being highly resistant to crocking, hot pressing, sublimation, drycleaning and chlorinated pool water, and also shows very good fastness to perspiration, sea water, AATCC #1 washing and pleating. Fastness to light is fairly good to good. It is not suitable for discharge patterns; in combination fiber materials when the acetate portion is dyed to a full strength adjacent fibers of cotton, rayon, nylon, wool and silk are stained considerably.

This product should be applied under carefully controlled conditions, and when dyed at 180° to 190°F the most desirable shade and strength are obtained. The resultant dyeings are level and well penetrated and the bath well exhausted for economical application.

Premetalized Neutral Dyeing Acid Dyes

Capracyl Brown HRN

Capracyl Brown HRN should be of interest where a bright bluish-brown shade is required on nylon or wool. When applied to either of these fibers, it exhibits the good fastness properties characteristic of the "Capracyl" dyes. It builds up on tone quite readily from pastel to heavy shades and is recommended by the manufacturers for making attractive shades of brown on all forms of filament nylon, spun nylon or wool. Because of its monotone buildup properties, Capracyl Brown HRN is especially suited to the continuous dyeing of wool rawstock.

It is stated that this dye exhibits good affinity from neutral or slightly acidic dyebaths and dyes levelly when applied by techniques recommended for Capracyl dyes. In the application of heavy shades on wool, acetic acid is sometimes required to effect complete dye exhaustion.

Capracyl Brown HRN becomes redder and brighter in shade under incandescent light. It exhibits staining properties similar to those of other Capracyl dyes when coloring multifiber materials.

Capracyl Green 2Y

Capracyl Green 2Y produces bright, yellowish-green shades on nylon and wool and makes possible many shades previously unobtainable in the Capracyl range. Shades produced with this new dye are said to possess the good fastness to light and wet processing characteristics of other dyes in the class. Capracyl Green 2Y is recommended by the manufacturers for application to materials intended for such end uses as suitings, carpeting and upholstery fabrics.

Capracyl Green 2Y is level dyeing on nylon and wool when applied by recommended techniques. It builds up on tone from pastel to full greens, becomes yellower in shade in incandescent light and stains effect fibers similar to other Capracyl dyes. Capracyl Green 2Y can be applied in all types of equipment to rawstock, yarn or fabrics of filament nylon, spun nylon or wool.

Vat Dyes

Ponsol Flavone GCND Paste

Ponsol Flavone GCND Paste is a highly dispersed anthraquinone vat dye paste especially developed for dyeing cotton and rayon in packages or on beams. It yields clear lemon yellow shades, can be used as a self shade, as a brightening agent for other yellows and is of particular interest as a component in the production of bright Kelly greens. The product has outstanding filtration and level dyeing properties which are essential in pro-

It is stated that Ponsol Flavone GCND Paste is identical to Ponsol Flavone GCN Paste in shade, strength and fastness properties, showing good resistance to washing, chlorine, perspiration, pressing, salt water and water spotting. It reduces readily, is normally reduced and dyed at 120°F, exhausts efficiently and has good vat stability.

Ponsol Flavone GCND Paste is manufactured as a highly dispersed product recommended by the manufacturers primarily for use in circulating equipment. When this shade is required for piece goods to be dyed by continuous pad-steam processes it is suggested that the GCN Paste type be used to eliminate the possibility of migration problems.

Ponsol Yellow 2G Double Paste

Ponsol Yellow 2G Double Paste is an anthraquinone derivative vat dye that produces reddish-yellow shades on cellulosic fibers. It is recommended by the manufacturers for application to either cotton or rayon in the form of yarn or piece goods intended for use in hosiery, knit goods, towelings, sheetings and similar items. Good fastness to washing, chlorine, peroxide bleaching, pressing and water spotting and fairly good lightfastness are said to make this product of considerable interest for the above end uses. This product is suitable as a self-shade or as a component in making orange, brown or black shades. Ponsol Yellow 2G Double Paste can also be used as a yellow shading color in conventional textile printing as it displays good buildup characteristics on either cotton or rayon and has good hangout and aging properties.

Ponsol Yellow 2G Double Paste performs well in all types of dyeing equipment and can be applied by reduced dyeing methods or as a dispersion followed by reduction. It is stated that it is not sensitive to normal variations in the concentration of caustic soda and Du Pont Hydrosulfite Conc, exhausts well, dyes levelly and has good stability at high temperatures although dyeings made at 190°F are somewhat weaker than similar dyeings carried out at 120°F. The shade of Ponsol Yellow 2G Double Paste is only slightly affected by metals, appears redder under incandescent light and becomes brighter when soaped after dyeing.

This dye reduces readily with caustic soda and Du Pont Hydrosulfite Conc. to a reddish-brown vat and dyes best at a temperature 120°F or less, although it can be applied at temperatures up to 190°F with fairly good results.

Ponsol Yellow 6GL Paste

Ponsol Yellow 6GL Paste is an anthraquinone vat dye that is said to have outstanding lightfastness and also possess good fastness to washing, chlorine and other color-destroying influences. Its brightness on cellulosic fibers makes it attractive as a self-shade or as a shading component for chartreuse, mint and other shades. It is recommended by the manufacturers for towels, dress goods, sportswear and other uses that require the good fastness properties mentioned. It is stated that this product also has good fastness to peroxide bleaching which makes it especially useful for dyeing cotton yarn that will subsequently be bleached. Ponsol Yellow 6GL Paste is of considerable interest for use in the textile printing trade when optimum lightfastness of yellow or chartreuse prints is required. It is recommended by the manufacturers for producing light to light-medium shades by conventional printing methods and for prints by any depth by blotch development or the Savagraph process.

Ponsol Yellow 6GL Paste can be applied to cotton or rayon piece goods by the Du Pont Continuous Dyeing Process, pad-jig techniques or other conventional methods. For best results, the pigment method of application followed by reduction is recommended for dyeing packages, beams and rawstock.

This new vat yellow is not sensitive to normal variations in the concentration of caustic soda used for dyeing, becomes redder in shade under incandescent light and exhibits little shade change on soaping.

Ponsol Golden Orange 2BG Double Paste

Ponsol Golden Orange 2BG Double Paste is an anthraquinone vat dye that produces yellowish-orange shades of outstanding brightness on cellulosic fibers. It is of interest as a self-shade or as a component in mode shade formulations and is recommended by the manufacturers for use on towelings, shirtings, drapery and upholstery fabrics, sewing threads, and other materials that require good fastness to light, washing or bleaching. This product is particularly suited to continuous dyeing methods where limited soaping time is available as it exhibits little shade change when soaped after dyeing. Ponsol Golden Orange 2BG Double Paste is also recommended for printing by conventional methods. It has good hangout and aging properties and is noticeably yellower in shade than any of the Du Pont vat orange dyes previously offered for printing.

Ponsol Golden Orange 2BG Double Paste performs well in all types of dyeing equipment and can be used on all forms of cotton or rayon. It can be applied by reduced dyeing methods or as a dispersion followed by reduction. Dyeings of Ponsol Golden Orange 2BG Double Paste become much redder in shade under incandescent light.

Ponsol Brilliant Violet 4RND Paste

Ponsol Brilliant Violet 4RND Paste is an anthraquinone derivative vat dye developed especially for the package and beam dyeing of cotton or rayon. It is manufactured in the form of a thin, free-flowing, highly dispersed

paste that possesses outstanding pigment filtration properties. This new highly dispersed type yields clear, bright violet shades and can be used either alone or as a brightening component for navies and other shades.

Ponsol Brilliant Violet 4RND Paste is equivalent to Ponsol Brilliant Violet 4RN Paste in shade, strength and fastness properties and is said to show good resistance to light, washing, chlorine, peroxide bleaching, drycleaning and pressing. It reduces readily to a blue vat and is normally reduced and dyed at 140°F. A concentration of ¾ to 1 ounce per gallon each of caustic soda and Du Pont Hydrosulfite Conc. is usually sufficient for dyeing in circulating equipment.

Acetamine, Avitex, Capracyl, Celanthrene, Dacron, Latyl, Orlon, Ponsol, Pontamine and Sevron are registered trademarks of E I du Pont de Nemours & Company (Inc), Wilmington, Delaware.

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EASTMAN CHEMICAL PRODUCTS, INC
Kingsport, Tenn

Eastman Polyester Pink RL

A disperse dye for polyester fibers possessing excellent fastness to washing, sublimation and crocking with extreme lightfastness in light shades. Useful as a self shade or as the red component in beiges, greys and tans, the new dye has a slow build and is, therefore, suggested for shades using not more than 2% of dye owf. It may be applied with carriers from an aqueous bath at 205°F to 212°F or under pressure at 250°F without a carrier.

COLOUR INDEX IS COMPLETE. ORDER NOW FROM AATCC HEADQUARTERS LOWELL, MASS

GEIGY DYESTUFFS
DIV OF GEIGY CHEMICAL CORP
Saw Mill River Road
Ardsley, N Y

Cuprophenyl* Black B W L 200%
Cuprophenyl* Black G W L 200%

These after-coppering Cuprophenyls offer deep shades of black on cotton and are said to distinguish themselves for outstanding wash fastness and very good resistance to light. Joining Cuprophenyl Black R L, Geigy now offers a most desirable range of after-coppered blacks, with the Black G W L offering a greener shade and the Black B W L yielding greenr shade and the Black B W L yielding a bluer shade. These Cuprophenyls are direct dyestuffs which when aftertreated with copper sulfate and acetic acid are said to possess as a group the washing, wet and perspiration fastness of developed colors with far superior light fastness. They are said to be well adapted for use with anticrease resins and/or coppered fixatives.

*Registered trademark

Diazophenyl* Scarlet F L

One of the brightest developed colors marketed and said to offer good wet fastness, excellent dischargeability and acetate rayon reserve. For a developed scarlet, reasonably good fastness to light is available, and with the addition of creaseproof finish this feature is improved further. These characteristics stress the importance of this product in the dyeing of knit goods, hosiery and rayon dress fabrics as well as other textiles normally processed with diazotized and developed dyestuffs.

*Registered trademark

Diphenyl Brilliant Flavine 7GFF

This new direct yellow is said to possess unique brightness with better fastness to light than previously obtainable. Exceptionally bright Kelly greens are now obtainable when used with bright direct blues. This product can be package, jig or beck dyed with level results. It exhausts with reasonable amounts of salt and is a well balanced color from an application standpoint. Flavine 7GFF is said to have good light and wet fastness properties and responds to aftertreatment for increased fastness to bleeding and washing. Urea formaldehyde resin treatments increase the light fastness without effecting the shade.

Erio Anthracene Brilliant Blue 3G Extra

This product offers a fast to light acid color in a bright and pleasing greenish shade of blue. It is said to be noted for its level dyeing characteristics as well as all around good fastness properties. It is particularly noteworthy for its ability to minimze barre when used on nylon and for its good light fastness on this fiber.

Irgalan* Bordeaux G L
Irgalan* Navy Blue 2 G L

The Irgalans offer an entirely new approach to the dyeing of wool in that they can be applied in shorter periods of time from a neutral bath with a minimum of boiling, and in many instances, it is claimed, with no boiling at all while still producing extremely level results, plus thorough penetration on the lightest of fabrics. It is stated that, for all around fastness, the Irgalans will approach or exceed the fastest of wool colors used heretofore. As well as being almost identical to each other with respect to fastness, the Irgalans also have almost identical working properties—that is, they draw and exhaust in combination like a homogeneous dyestuff. With the Irgalans, it is said, tippy wool and blends of various grades of wool can be dyed evenly to a solid shade. Irgalans are also recommended for the coloring of filament and spun nylon in all forms, application printing on cotton fabrics, coloring of cellulosic acetate by the solvent method, and coloring of silk.

Irgalan Bordeaux G L provides an excellent base for fast garnets and maroons on wool, nylon and silk. This product is said to be the most level dyeing bordeaux of the neutral drawing, premetalized group and to possess excellent fastness to light and very high resistance to mill processes.

Irgalan Navy Blue 2 G L offers added prestige to the range of Irgalan Navy Blues with its attractive greenish shade of navy blue. It is stated that its high light fastness on nylon especially suit this product for the automotive upholstery trade.

*Registered trademark

Irganol* Brilliant Green G L S
Irganol* Orange G R L S
Irganol* Red R L S

Irganol Brilliant Green G L S is said to offer exceptional brightness coupled with good resistance to light and general good fastness properties. As one of the Irganol/Irgalan colors, this product possesses excellent neutral drawing and exhaustion characteristics.

Irganol Orange G R L S is designed to complement the neutral drawing premetallized Irgalan series by providing similar fastness in brighter hues. It is notable for its brilliancy of shade and very good light and wet fastness.

Irganol Red R L S offers a pure shade of red on wool and a much brighter shade on silk. As true of other members of the Irganol range, Red R L S possesses good neutral drawing properties, fastness to light and wet processing.

*Registered trademark

Setacyl* Turquoise Blue 4G Supra
Setacyl* Yellow F L

Setacyl Turquoise Blue 4G Supra was designed to meet a need for a greener cast turquoise for acetate and nylon with fastness and working qualities characteristic of this series. Setacyl Yellow F L is introduced as a dispersed color said to possess outstanding washing, perspiration and wet fastness. In addition to displaying these properties on acetate, it is said to be a preferred dyestuff for Arnel and Acrilan.

*Registered trademark

Tinon* Brown 3BF Double Paste
Tinon* Grey BG-F Paste
Tinon* Grey 2GR-F Paste
Tinon* Brilliant Orange GR Paste

Tinon Brown 3BF Double Paste is said to provide excellent dyeing properties, ease of application and characteristic vat color fastness. This product offers slow exhaust for excellent package dyeing, desired dispersion for pigment application and high temperature application; withstands both mercerizing and peroxide bleaching.

Tinon Grey BG-F Paste is a homogeneous product said to possess superior working and leveling properties. Due to this and its excellent dispersion, Grey BG-F is popular as a self shade and as a shading element on cellulosic fibers.

Tinon Grey 2GR-F Paste is also said to be a homogeneous product characterized by low initial strike, exceptional level dyeing ability and excellent dispersion. It is outstanding in the dyeing of cotton and rayon packages and beams. Its particular advantage is in the dyeing of pastel shades heretofore found difficult to produce with level results.

Tinon Brilliant Orange GR Paste is said to offer exceptional brightness of shade with excellent over all fastness qualities. It has a slow exhaust rate, good leveling, particularly designed for package dyeing and withstands mercerizing and peroxide bleaching well.

*Registered trademark

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GENERAL DYESTUFF COMPANY
A DIV OF GENERAL ANILINE & FILM CORP
435 Hudson St
New York 14, N Y

Diamond Black GDC

A new chrome dyestuff, which is said to be especially useful for dyeing rich blacks on wool in any form when economy is of primary consideration. It is claimed to be a dye of very good solubility and leveling properties, which yields blacks of very good to excellent fastness to light, fulling (III 4-5), washing (III, 4-5), and cross dyeing. Excellent fastness to carbonizing, decatizing, perspiration, and hot pressing are given as additonal advantages.

Indanthrene* Corinth B Infra Paste

A new, straight vat dyestuff, which is claimed to give very good to excellent all-round fastness properties on cotton and rayon, including especially excellent fastness to light. It is said to have proved of great use as a strong and economical component in the production of deep browns and other combination shades. It is further claimed, as a consequence of excellent dispersibility, good resistance to overreducton, high leuco solubility and good releveling properties, to be suitable for application on cellulosic textiles in any form by any of the various vat-dyeing methods.

*Registered trademark

Indanthrene* Yellow GGL Infra Double Paste

A new anthraquinone vat dyestuff developed by General Aniline and Film Corp for dyeing medium yellow shades on cotton and rayon, which are said to have excellent fastness to light in full shades and excellent fastness to severe washing, chlorine, and peroxide bleaching. It is claimed at the same time to have high tinctorial value and therefore to be very economical. It is suggested for use on the padder, in the jig, and in circulating machines.

*Registered trademark

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THE HILTON-DAVIS CHEMICAL CO
2235 Langdon Farm Road
Cincinnati 13, Ohio

Hiltonil* Fast Scarlet GC Base

This easily diazotized fast color base is the

hydrochloride of Fast Scarlet G Base. The dispersability of this product makes for complete and rapid diazotization. Dyeings made with this product are said to be characterized by their cleanliness and brightness of shade and uniformity. Fast Scarlet GC Base is also dustless.

*Registered trademark

Seabond* Colors

Seabond Colors are the Hilton-Davis line of water-dispersible pigment colors for the fast color printing of cottons and synthetics. Seabond Colors are applied from an oil-in-water type emulsion. They supplement the Hilton-Davis line of Hiltone Colors which are applied from a water-in-oil type emulsion.

Seabond Colors are said to offer the advantages of exceptionally sharp marks and smooth blotches. Being water dispersible, the print rollers, blankets and other equipment are easily cleaned with water.

Seabond Colors may be printed alone or with Hiltone Colors, stabilized azoics and aniline black to provide a wide range of color combinations. The only after treatment necessary for Seabond Colors after printing and drying is to heat cure at elevated temperatures to polymerize the synthetic resins used as bonding agents.

Seabond Colors provide a wide range of brilliant shades which are said to possess outstanding fastness to light, washing and dry cleaning. The following standards are available:

Seabond White
Seabond Yellow 2G
Seabond Red 2B
Seabond Red B
Seabond Red KB
Seabond Red DCX
Seabond Brilliant Red
Seabond Scarlet 2G
Seabond Red KY
Seabond Violet 3R
Seabond Red Violet Y
Seabond Green B
Seabond Blue G
Seabond Brilliant Blue
Seabond Black K

*Registered trademark

Skytone* Colors

Skytone Colors are the Hilton-Davis line of pigment padding colors for the dyeing of cotton and synthetic fibers. Skytone Colors are available in brilliant shades said to be of outstanding fastness to light, washing, rubbing and dry cleaning.

The main advantages of Skytone Colors are said to be the simplicity and ease of application, excellent fastness qualities, bright shades, uniform dyeing, economy of dyeing costs.

Skytone Colors are furnished in concentrated color pastes and a Skytone Padding Emulsion which is used for increased fastness. Skytone Colors are adjusted to dye strength with water and applied by continuous padding method. The only necessary after treatment is a curing at elevated temperatures.

The following standards are available:

Skytone Yellow 2G
Skytone Chartreuse
Skytone Scarlet 2G
Skytone Red B
Skytone Violet 3R
Skytone Red Violet Y
Skytone Blue G
Skytone Blue 2G
Skytone Green B
Skytone Grey K
Skytone Padding Emulsion

*Registered trademark

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INTERCHEMICAL CORPORATION COLOR & CHEMICALS DIVISION
Hawthorne, New Jersey

Aquaprint* White N Y

A new resin-bonded pigment white formulated especially for fast-color printing cottons, synthetics, and blends for either apparel or household uses. It is applied to textiles in the form of a pigmented oil-in-water emulsion. It is useful for producing true white-on-white application prints requiring good non-yellowing characteristics to heat and light Aquaprint White NY also is said to provide excellent fastness both to washing and dry-cleaning.

*Registered trademark

Aridye*/Aquaprint* Blue 2GN

Aridye Blue 2GN is a new resin-bonded pigment color formulated especially for fast-color printing cottons, synthetics, and blends for either apparel or household uses. It is applied to textiles in the form of a pigmented water-in-oil emulsion. It is useful as a self-shade for producing bright, blue shades on the green side, and is especially useful as the base component for formulating green-blues. Aridye Blue 2GN is said to provide outstanding fastness to light; it withstands 300 hours Fade-Ometer exposure without appreciable shade change or fading. In addition, it is said to provide excellent fastness both to washing and drycleaning. Aridye Blue 2GN is an excellent color for printing cotton to be plisséd; it does not cut-out with caustic soda. It is excellent also for discharge printing since it is not affected by sodium or zinc sulfoxylate formaldehyde. Blue 2GN is offered also in Interchemical's Aquaprint Series. The colors in this series are applied to textiles in the form of pigmented oil-in-water emulsions.

*Registered trademark

Aridye*/Aquaprint* Blue 2R

Aridye Blue 2R is a newly improved resin-bonded pigment color formulated especially for fast-color printing cottons, synthetics, and blends for either apparel or household uses. It is applied to textiles in the form of a pigmented water-in-oil emulsion. Specific advantages of the new Aridye Blue 2R are said to include cleaner, brighter, stronger application prints and improved fastness, particularly to drycleaning. Aridye Blue 2R is useful for producing bright, reddish blue shades requiring excellent all-round fastness. It is said to withstand 300 hours Fade-Ometer exposure without appreciable shade change or fading. In addition, it is said to provide excellent fastness both to washing and drycleaning. Aridye Blue 2R is an excellent color for printing cotton to be plisséd; it does not cut-out with caustic soda. It can also be employed for discharge printing since it is not affected by sodium or zinc sulfoxylate formaldehyde. The new Blue 2R is offered also in Interchemical's Aquaprint Series. The colors in this series are applied to textiles in the form of pigmented oil-in-water emulsions.

*Registered trademark

Aridye*/Aquaprint* Pink Y

Aridye Pink Y is a new resin-bonded pigment color formulated especially for fast-color printing cottons, synthetics, and blends for either apparel or household uses. It is applied to textiles in the form of a pigmented water-in-oil emulsion. It is said to be useful for producing attractive, neutral shades of pink requiring excellent all-round fastness. Aridye Pink Y is said to provide lightfastness which meets normal drapery requirements and excellent fastness both to washing and drycleaning. Also, it provides excellent resistance to caustic cut-out in plissé work. Pink Y is offered also in Interchemical's Aridye Pigment Padding Series and Aquaprint Series.

*Registered trademark

Aridye* Red RF

A new, unique resin-bonded pigment color formulated especially for fast-color printing cottons, synthetics, and blends for either apparel or household uses. It is applied to textiles in the form of a pigmented water-in-oil emulsion. Specific advantages of the new Aridye Red RF include cleaner, brighter, stronger application prints. Outstanding among reds for fastness, Aridye Red RF is said to provide lightfastness which meets normal drapery requirements and excellent fastness both to washing and drycleaning. Also, it provides excellent resistance to caustic cut-out in plissé work. Aridye Red has no prototype; the pigment employed was developed by Interchemical. It is useful for producing attractive, neutral red shades and is excellent for making browns and tans. Red RF is offered also in Interchemical's Aquaprint* Series. The colors in this series are applied to textiles in the form of pigmented oil-in-water emulsons.

*Registered trademark

Interchem* Blue GNA

A new disperse dye developed specifically for producing bright, blue shades of good depth on acetate and Arnel. It is useful also in combinations for producing greens, navies, tans, and browns. This dye can be applied either on jigs or boxes at temperatures from 160-190°F. The color yield is particularly good at 190°F or higher, with good level dyeing properties. It has good stability in both alkaline and acid dye baths. Also, it has good physical and chemical stability to prolonged dyeing at the boil. Outstanding features of Interchem Blue GNA are said to include good fastness to light, washing, drycleaning, sublimation, and gas fading.

*Registered trademark

Interchem* Polydye Colors

Interchem Polydye Colors are Interchemical's new disperse dyes designed specifically for dyeing polyester fibers, such as Dacron, in fabric, tow, yarn, and raw stock forms. These new dyes can be applied either by carrier dyeing techniques or high temperature methods. They are said to provide the necessary fastness to light, washing, drycleaning, and sublimation required for polyester fibers. The Interchem Polydye Colors available now are listed below. They can be employed as self-shades and in combinations with one another for producing a wide variety of compound shades. Other Interchem Polydye Colors are in development and will be released soon.

Interchem Polydye Yellow GSFD
Interchem Polydye Yellow 4RLD
Interchem Polydye Scarlet 2G
Interchem Polydye Violet B
Interchem Polydye Blue RLD
Interchem Polydye Blue GND
Interchem Polydye Blue GSFR

*Registered trademark

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KOPPERS COMPANY, INC CHEMICALS AND DYESTUFFS DIVISION
Pittsburgh 19, Pa

Amacel* Green Blue G ex

Disperse dye for acetate, nylon and Arnel. Bright turquoise shade, greener and brighter than Amacel Green Blue B ex. and said to possess the same good fastness properties of water and light fastness. Good dispersibility and fastness to acids and alkalis are claimed.

*Registered trademark

Amacid* Nylon Black NK and NC

These blacks are especially recommended by the manufacturers for dyeing of nylon in all forms, especially knit goods, Banlon & Helanca. Economical, they are said to produce jet blacks of very good wash fastness from a bath with ammonium sulfate. The "NC" type leaves Dacron and Orlon effects clean.

*Registered trademark

Amacron* Blue BLS

A bright, greenish blue for polyester fibers, said to be of excellent fastness to light, sublimation and washing. It is suitable for full blue shades, as well as for green combinations.

*Registered trademark

Amacron* Blue 3RLS

This reddish blue produces full, economical deep blue on polyester fibers. It is said to possess excellent fastness to washing, light and sublimation.

*Registered trademark

Amacron* Violet B

This bright violet produces full shades on polyester fibers. It is said to possess very good fastness to light, washing and perspiration and is an economical basis for navy blue shades.

*Registered trademark

Amalan* Black WA

Premetallized black for dyeing with sulfuric acid on wool. It is stated that it is a fast black for silk and nylon and also for leather and has very good fastness to light and milling. Dyes wool and nylon union. Good printing color for silk and wool.

*Registered trademark

Amanil* Developed Scarlet RCW ex 200%

Dischargeable scarlet for cotton and viscose said to possess good fastness to washing when developed with B napthol. White discharge effects are not stained in the print wash.

*Registered trademark

Amanil* Viscose Black JG

Deep, jet black for viscose, free from bronziness. It is stated that it has excellent solubility and is suitable for padding and for printing. White dischargeable. Fair fastness to washing and light.

*Registered trademark

Amanthrene* Brown HRR Paste

A unique vat color, being a straight brown suitable for both dyeing and printing. This vat brown is tinctorially strong, can be dyed on piece goods and on packages, as well as printed on cotton or viscose rayon piece goods. It is said to possess excellent fastness to light and washing. A reddish brown, it can be used as the basis for dark browns by mixing with vat blues or greens.

*Registered trademark

Amanthrene* Direct Black AP Disperscon Powder 200%

Vat color, ultrafine powder, readily dispersible in water without specks. Dyes black on cotton or viscose and is said to be fast to chlorine and light.

*Registered trademark

Amanthrene* Golden Orange 3G Disperscon Powder 300%

Concentrated anthraquinone vat color in ultrafine readily-dispersible form. Dyes cotton and viscose a golden orange said to be of excellent fastness to light and all wet processes.

*Registered trademark

Amanthrene* Orange R Disperscon Powder 400%

Concentrated vat orange of indigoid constitution, in readily dispersible form.

*Registered trademark

Amanthrene* Red FBB Double Powder 200%
Amanthrene* Red FBB Disperscon Powder 600%

Anthraquinone vat red of bluish cast in fine dispersible powder. The Disperscon Powder is in highly concentrated form.

*Registered trademark

Amaplast* Black HY

In all purpose plastic black, soluble in organic solvents and suitable for coloration of resins and plastics. Has high covering power and can be used for recoloring rejected scrap.

*Registered trademark

Amaplast* Orange OR

A high tinctorial orange for plastics. Produces a strong yellowish orange, especially suitable for polystyrene.

*Registered trademark

Amaplast* Orange ORC

A strong reddish orange for plastic coloration, especially for polystyrene.

*Registered trademark

Amaplast* Red GG

A bright red for plastics, suitable for polystyrene methyl methacrylate and other resins.

*Registered trademark

It is readily dissolved in aromatic and aliphatic solvents, and produces a bluish red said to be of excellent clarity and high light fastness. It withstands high molding temperatures.

Amaplast* Red Violet RHT

A plastic dye of excellent dispersion, yielding a brilliant red violet in molded or extruded resins with a yellowish side fluorescence. This dyestuff is said to possess excellent light fastness and withstand high molding temperatures.

*Registered trademark

Metal Exterior Black New

Black for dyeing anodized aluminum for exterior construction. It is claimed to have highest fastness to light, as required for outdoor exposure.

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NATIONAL ANILINE DIVISION
Allied Chemical Corporation
40 Rector St, New York 6, New York

National® Carbanthrene® Brown VR Paste

An anthraquinone vat dye producing reddish-brown shades on cotton and rayon. It is said to possess maximum fastness to light in heavy shades, the highest AATCC rating, and excellent fastness to most wet fastness tests. It is practically unaffected by the presence of metals in the dyebath, and posesses very good Franklin solubility. It is suitable for use in all types of dyeing equipment, and is particularly well adapted for the various pigment impregnation methods of application. In package dyeing, it possesses a desirable low sensitivity to elevated temperatures while in the leuco state. This product is recommended by the manufacturer for coloring materials that are to be resin finished for crease resistance.

National® Erie® Fast Scarlet 4BSH

A nondusting direct dye producing bright red shades on cotton and rayon. It is said to possess moderate fastness to light, and very good to excellent fastness to most wet fastness tests. An outstanding characteristic of this product is its exceptional solubility in cold, hard water. It is therefore of special interest in hard water territory—especially for package dyeing of cotton and rayon yarns, and for beater dyeing of paper. This product is also suitable for leather, cotton-rayon unions and for dyeing materials that are subsequently to be rubberized.

National® Red PDC Salt

A stabilized diazonium salt producing, on cotton and rayon, a range of bright, bluish-red shades when diazotized and coupled with most National Naphthols except National Naphthol AS-G Disp., which yields a bright, greenish-yellow. Most of these couplings are said to exhibit good fastness to light, and very good to excellent fastness to most wet fastness tests. An outstanding characteristic of this product, when coupled with National Naphthol AS-SW, is said to be its very good fastness to peroxide bleaching. It is therefore recommended for coloring yarns for toweling and other materials where peroxide bleaching fastness is required. National Red PDC Salt is applicable by all the dyeing processes generally employed for dyes of this type, and many of the combinations can be discharged to excellent white.

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ORGANIC CHEMICAL CORP
P O Box 432
Providence 1, R I

Nerosol Black RF

This dyestuff is a totally new concept in woolen and worsted dyeing to replace the usual top chrome black method. The complete dyeing cycle is said to be only 1¼ hours instead of 3½ hours. Due to the shorter length of time which the fiber is dyeing, a softer, finer stock results for more efficient carding. In piece-goods dyeing, a softer hand is said to be experienced, resulting in pieces which produce the desired finish with considerably less difficulty. It is claimed that this dyeing process is extremely uniform, producing a deep rich chrome black with no sacrifice in fastness properties. Nerosol Black RF is said to show savings of 10%—20% in typical plant runs.

Other Nerosol colors will be added to the range in the near future with equally good qualities.

ORCO* Naphthol AS 25% Solution
ORCO* Naphthol AS 40% Solution
ORCO* Naphthol AS-SW 33⅓% Solution

These presently available azoic dyestuff solutions have been compounded with stability to storage in mind. It is claimed that the use of these solutions, in preference to the powder variety, not only insures brighter, cleaner shades, but also saves a considerable amount of dyehouse labor. These products can be applied in closed machines as well as in open jigs and padders to all fibers and fabrics normally dyed with naphthols. Other naphthol solutions may be made available on request.

*Registered trademark

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PFISTER CHEMICAL WORKS, INC
Ridgefield, N J

Azoic Printing Colors

These colors are to be used for neutral, flash acid steam aging, or regular acid aging:

Azoic Black NB Solution 40%
Azoic Blue NB Solution 40%
Azoic Bordeaux NB Solution 20%
Azoic Brown NF Solution 20%
Azoic Navy Blue NB Solution 40%
Azoic Orange NJ Solution 30%
Azoic Red NJ Solution 50%
Azoic Red NR Solution 20%
Azoic Red NS Solution 40%
Azoic Scarlet NR Solution 40%
Azoic Yellow NJ Solution 40%
Azoic Yellow NV Solution 40%

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PUTNAM CHEMICAL CORP
Beacon, N Y

Basacryl* Dyestuffs

This new group of dyestuffs comprises the following six types:

Basacryl Yellow 423
Basacryl Yellow 420
Basacryl Red 729
Basacryl Violet 560
Basacryl Blue Violet 507
Basacryl Blue 214

They are modified basic colors so that their dyeing properties and other general characteristics are different from the generally known basic dyes. These cationic dyestuffs are specifically manufactured for the dyeing of acrylic fibers. They all have the same exhaust rate and can, therefore, be easily intermixed to produce intermediate shades including a navy and a black. The fastness to light is claimed to be extremely high.

*Registered trademark

Basolan* Dyestuffs

The line of Basolan acid Dyestuffs has been augmented by:

Basolan Fast Yellow GGL
Basolan Fast Yellow GRL
Basolan Fast Orange GL
Basolan Fast Orange RRR
Basolan Fast Red GL

The above types are homogeneous products claimed to be of extreme brightness of shade and of very outstanding fastness to light. The products are said to be well suitable for the dyeing of wool, silk and polyamide fibers.

*Registered trademark

Neopilate* S Dyestuffs

This new color group represents 1:1 metal complex dyes reacted with colorless complex builders. They contain solubilizing groups but no sulfonic acid groups. Their dyeing range is between pH 2.5-4.0. It is stated that the products are particularly suitable for heavy woolens showing an excellent penetration and very good leveling power. The Neopilate S group comprises the following types:

Neopilate Yellow GS
Neopilate Yellow RS
Neopilate Orange GRS
Neopilate Red GGS
Neopilate Bordeaux 3BS
Neopilate Violet BS
Neopilate Blue TRNS
Neopilate Blue RNS
Neopilate Dark Blue GS
Neopilate Blue Grey GS

*Registered trademark

Ortol* Dyestuffs

This group comprises four types:

Ortol Yellow F4G
Ortol Scarlet FG
Ortol Blue FG
Ortol Green B

These products can be neutral dyed and are said to have an excellent fastness on wool, silk and nylon. The products are not metal complex compounds, but resemble however, in their dyeing behavior, the neutral dyeing Ortolan types. The Ortol Dyestuffs are recommended to be used in conjunction with the Ortolans to impart to the generally duller premetalized products a more brilliant shade.

*Registered trademark

Ortolan* Dyestuffs

These are neutral dyeing 1:2 metal complex dyes containing solubilizing groups but no sulfonic acid groups. The Ortolan dyestuffs are said to have good leveling properties, excellent fastness to light and very good all-around other fastness properties. The use of Ortolan Dyestuffs is said to permit savings in time, steam and labor as the dyeing cycle is relatively short. The Ortolan Dyestuffs are recommended for the dyeing of wool in all its physical forms and is also suitable for silk and polyamide fibers. The following types are in the range of this group:

Ortolan Yellow G
Ortolan Yellow 2R
Ortolan Orange R
Ortolan Red G
Ortolan Bordeaux FBB
Ortolan Violet B
Ortolan Blue FR
Ortolan Blue G
Ortolan Brown 3R
Ortolan Brown GR
Ortolan Brown 3G
Ortolan Brown GG
Ortolan Brown B
Ortolan Black G Special

*Registered trademark

Palacet* Fast Dyestuffs

The Palacet dyestuff group represents acetate disperse dyestuffs. The group has been augmented with the following products claimed to be of good fastness properties, brilliance of shade and very good dyeing properties.

Palacet Yellow 5G
Palacet Fast Yellow 3G
Palacet Brilliant Yellow 8G
Palacet Fast Yellow 7G
Palacet Fast Pink FF3B
Palacet Fast Pink RF
Palacet Fast Red BB
Palacet Fast Red GG
Palacet Fast Red Violet RN
Palacet Fast Violet B
Palacet Fast Violet 6B
Palacet Fast Blue Extra
Palacet Fast Blue G
Palacet Fast Blue FFB
Palacet Fast Blue FFR
Palacet Navy Blue BR

*Registered trademark

Palanthrene* Blue CLB (CI Vat Blue 30)

A very good levelling type with a light rating of 7 in very light blues, and 7-8 for heavier shades. Claimed to have very good fastness to chlorine.

*Registered trademark

Palanthrene* Brilliant Pink BBL

In very light shades the light rating is 6-7 and for heavier shades 7-8. Chlorine fastness is rated as 5. The product is said to have excellent levelling properties.

*Registered trademark

Palanthrene* Brilliant Scarlet RK (CI Vat Red 40)

A very bright bluish red with a lightfastness rating of 6-7 in very light shades and 7-8 in heavier shades. Chlorine fastness is rated as 5. The color is said to have excellent levelling properties.

*Registered trademark

Palanthrene* Brown LG (CI Vat Brown 46)

A homogeneous vat color said to have excellent levelling properties. The light rating is 7 for light tans and 7-8 for heavier browns. Chlorine rating is 4-5.

*Registered trademark

Palanthrene* Grey CGG Paste

A neutral grey vat color said to be of very excellent levelling properties. It is rated 6-7 to light in very light greys and 7-8 in darker greys. Chlorine fastness is rated as 4-5.

*Registered trademark

Palanthrene* Grey CL p f f d

Said to be an excellently level dyeing vat color with a light rating of 6-7 in very light shades and 7 for heavier greys. Chlorine rating is 4-5.

*Registered trademark

Palanthrene* Olive GRL Colloisol

It is stated that this product has excellent fastness to light and is very level dyeing. It is a homogeneous vat color.

*Registered trademark

Palanthrene* Orange RR p f f d (CI Vat Orange 3)

A vat orange with a light rating of 6-7 in light shades, 7-8 in heavier shades. Chlorine fastness is rated as 5. A very good levelling color.

*Registered trademark

Palanthrene* Yellow 4GF p f f d (CI Vat Yellow 20)

A vat color with a light rating of 6-7 in light shades and 7-8 in heavier shades in sunlight exposure. Chlorine fastness rating is 5. Represents a greenish yellow shade and is said to have excellent levelling properties.

*Registered trademark

Pilate* Fast Dyestuffs

This dyestuff group represents 1:1 metal complex dyes with sulfonic acid groups. The following types have been added to the range:

PILATE FAST RED BEN—A very bright red said to have very good light fastness and other good all-around fastness properties.

PILATE FAST BORDEAUX BN—A bright bluish red shade with a light rating of 7 and said to possess all-around very good fastness properties.

PILATE FAST RED LBN—Said to have excellent brightness of shade with a light fastness of 6-7 and other very good fastness properties.

PILATE FAST GREEN BGN—Representing a bright shade said to possess a fastness rating of 6 to light and other good all-around fastness properties.

*Registered trademark

SANDOZ, INC
61-63 Van Dam St
New York 13, N Y

Artisil® Direct Blue Green 3G

A direct dye suitable for coloring acetate, triacetate, polyester, acrylic, and nylon fibers, this homogenous dyestuff is said to offer the closest approach to a true green shade. Fastness to sunlight is said to be extremely good on acetate and nylon and brightness of shade to be outstanding. Its stability to heat recommends it for heat treatment of nylons and triacetates.

Brilliant Alizarine Milling Green 2GL paf

Said to be unlike any other acid milling green, this dyestuff is remarkable for its wet fastness; fastness to light on wool, nylon, or silk; brightness of shade; resistance of shade and fastness to chlorination; and resistance to decatizing. Recommended for silk prints, and for shading neutral dyeing pre-metalized dyes, and chrome dyes.

Chloramine Black BHB

Direct dye, greener and brighter than Chloramine Black BH. It is stated that it is also much superior in solubility and slightly better in fastness to light, as compared with similar competitive blacks.

Cuprofix® Bordeaux C-FBL paf

The fastness to light of this attractive Bordeaux is said to be highly rated with copper aftertreatment; and it is further improved by combination with UF. Acetate reserve is excellent. Wash and crock fastness are said to be extremely good on viscose with Cuprofix or Cuprofix/UF aftertreatment. Solubility of 100 grams per liter makes it particularly good for padding and the Swedish Pad Roll System.

Cuprofix® Yellow C-2GL paf

Bright, new after-coppering yellow for use on cotton and regenerated cellulosic fibers. It is said to offer excellent money value and very good solubility and stability to hard water. It reserves acetate and is suitable for pad dyeing. Maximum washfastness is claimed whether goods are aftertreated with Cuprofix or copper sulfate (with or without UF). Fastness to light following the aftertreatment is extremely good and the shade is stable to resin anticrease finishing.

Lanasyn® Brilliant Red 2BL paf

For bright shades on wool, silk, and polyamide fibers, this homogenous dyestuff may be applied in neutral or weakly acid baths, as a self shade or for shading the neutral dyeing premetallized Lanasyn colors and some milling dyes. Its fastness to light and fulling are said to be outstanding. The shade is very stable to chrome and to chlorine shrink proofing.

Lanasyn® Grey 2BL paf

Said to be the bluest and clearest of the available neutral dyeing premetallized greys, this dyestuff offers a high degree of all-around fastness properties. It is also of special interest where resistance to carbonizing and to decatizing are important.

Lumicrease/Cuprofix® Green 3LG paf

The fastness to light of this new direct green is rated 6+ on cotton and 7+ on spun viscose. Aftertreatment with Cuprofix or with UF has no degrading effect on this fastness. When resin treated, fabrics dyed with this green are said to exhibit very superior fastness to washing and perspiration. It is stated that it is fast to water spotting and hot wet pressing, and it discharges to a good white, either neutral or alkaline.

Naphthol Blue Black B Conc Purified

The acetate reserve of this dye is said to be equal to that of premium priced blacks for wool. The other properties of this color are said to be equal to those of Naphthol Blue Black B Conc (Acid Black No. 1).

Omega Chrome Black SNA Extra Conc

This is a new type of Omega Chrome Black SNA Extra Conc. It has double the solubility of its predecessor, exhausts very cleanly in the presence of acetic acid, and has a lower pH. Fastness to acetic or sulfuric acid cross dyeing and fulling is said to be superior.

Pyrazol® Fast/Cuprofix® Turquoise FBL

Recommended by the manufacturers for direct dyeing of cotton and viscose requiring a very high degree of fastness to washing, acid or gas fading, and perspiration. It is stated that the fastness to light is very good; and the wet fastness is improved by aftertreatment with Sandofix WE, or UF alone or in combination. Brightness of shade and good solubility are other features of this dye. Also, it is suitable for padding and for silk dyeing.

Pyrazol® Fast Scarlet RL

Fastness to light is said to be the best of any direct scarlet on the market. Minimum shade change in resin finishing. Acetate reserve is said to be excellent.

Sandothrene® Blue NGRM Double Paste
Sandothrene® Brown NRM Double Paste
Sandothrene® Brown NBGM Double Paste

These vat dyes are specially developed, nonmigrating types of the familiar Sandothrene Blue NGR, Brown NR, and Brown NBG Ultrasperse vat colors. They are said to offer all the fastness properties of the Ultrasperse varieties just named plus the characteristic resistance to migration which is needed in pigment padding.

Sandothrene® Brilliant Orange NGR Paste Ultrasperse®

A brilliant orange shade with high tinctorial value and build-up for heavy shades, this vat color is useful for dyeings and prints featuring tangerine tones on dress goods, draperies, and upholstery fabrics. It is suitable for dyeing on all types of machinery, and for printing by conventional methods. It is stated that fastness to light is exceptionally good before and after EUF resin treatment. Good all around fastness properties and excellent fastness to crocking and washing are claimed.

Sandothrene® Brown N3B Double Paste Ultrasperse®

Wash fastness and freedom from change of shade in resin finishing recommend this vat brown for use on wash 'n wear cottons. For awning canvas it is said to offer improved freedom from tendering and excellent fastness to light. It has high resistance to strong boiling. It is stated that it may be used for all types of fast dyeing and is also suitable for printing by the flash aging method.

Sandothrene® Dark Blue N2B Double Paste Ultrasperse®

A free flowing anthraquinone vat paste, manufactured primarily for the production of navy shades. This dye builds well and provides good money value. It exhibits a neutral tone that the dyer will find easy to shade and is recommended by the manufacturers in dark shades as one of the best of all navies in respect to light changes. This dye is said to have very good all around fastness. It is stated that light fastness is 200 hours in dark shades. Ten successive wash tests with chlorine show no effect on the shade.

Sandothrene® Grey N2GR Paste Ultrasperse®

Unusually good level dyeing properties, good fastness to mercerizing and boiling, and suitability for printing by the flash aging method are the features claimed for this vat grey. Its slow rate of exhaustion makes it an especially good color for package and beam dyeing. Shade is relatively unimpaired, lightfastness slightly improved by aftertreatment with melamine or UF resins, making it a good choice for wash and wear applications.

Visco Black BAW

Fastness to light, water, crocking, perspiration, dry cleaning, and hot wet pressing are said to be highly rated. This dye is recommended by the manufacturers for use on viscose and on viscose acetate blends when a good acetate reserve is desired.

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UNITED ANILINE CO
Endicott St
Norwood, Mass

Unatints

Fugitive tints used for sighting which are said to be 100% removable through scouring.

VERONA DYESTUFFS
Springfield Road
Union, N J

Alizarine Brilliant Sky Blue BLWA

This product is said to possess very good light and wet fastness wth excellent solubility. It is recommended by the manufacturer for the dyeing of bright shades on top, hosiery, and knitting yarns. Due to its high affinity from a neutral bath, Alizarine Brilliant Sky Blue BLWA is also recommended for dyeing union materials, silk and half-silk.

Astrazon* Blue 5GL

A new greenish blue modified basic dyestuff for dyeing polyacrylic fibers, said to possess outstanding light fastness and very good wet fastness. This important addition to the Astrazon* "L" range is recommended for producing Bright Turquoise and Green shades. Because of its greener shade in artificial light, it is extremely useful as a shading component for light fast fashion shades. In this respect the followng combination is recommended:

Astrazon* Yellow 7GLL or Astrazon Golden Yellow GLD
Astrazon* Red GTL
Astrazon* Blue 5GL

Astrazon* Blue 5GL is suitable for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Blue RL and 3RL

These modified basic dyestuffs represent new additions to the Astrazon* "L" range, and are said to possess maximum light fastness and outstanding wet fastness on polyacrylic fibers. They are suitable also for the dyeing of acetate and for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Golden Yellow GLD

This new cationic dyestuff produces a reddish-yellow shade on polyacrylic fibers, said to possess excellent light fastness and very good wet fastness. It has particular value as the yellow component in combination with Astrazon* Pink BL and Astrazon* Blue FGL for the production of level dyeing pastel mode shades. Suitable for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Olive Green BL

This product is said to represent the first known manufacture of a homogeneous olive green cationic dyestuff, mainly intended for the production of olive green and dark green shades on polyacrylic fibers. It is said to possess excellent fastness to light and very good wet fastness, and is suitable for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Orange RRL and 3RL

These modified basic dyestuffs represent new additions to the Astrazon* "L" range, recommended by the manufacturers for the dyeing of polyacrylic fibers.

Astrazon* Orange RRL gives a neutral shade of orange said to possess excellent light fastness and very good wet fastness. Astrazon* Orange 3RL produces bright reddish shades of orange, of similar fastness properties. It is mainly employed as a self-shade or as the base component for reds and scarlets. Suitable for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Pink BL

This represents a new bluish-pink modified basic dyestuff for the dyeing of polyacrylic fibers. It is said to possess very good light fastness and outstanding wet fastness. This addition to the Astrazon "L" range is mainly intended for producing light-dark shades of pink and as a shading component.

*Registered trademark

Astrazon* Red BBL and GTL

These modified basic dyestuffs represent new additions to the Astrazon* "L" range and are recommended by the manufacturers for the dyeing of polyacrylic fibers. Astrazon* Red BBL produces a bluish-red shade said to possess excellent light and wetfastness. It is particularly recommended as the base component for red and bordeaux shades. An additional feature is its freedom from dichroism, a highly desirable property when producing fashion shades.

Astrazon* Red GTL is a very important yellowish-red type said to possess outstanding light and wet fastness. It is mainly employed as the red component for producing fashion shades in combination with Astrazon* Yellow 7GLL or Astrazon* Golden Yellow GLD and Astrazon* Blue 5GL.

Both products are suitable for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Yellow 7GLL

Astrazon* Yellow 7GLL is a bright-greenish yellow modified basic dyestuff said to possess outstanding light fastness and very good wet fastness on polyacrylic fibers. It is mainly used as the yellow component in combination with Astrazon* Red GTL and Astrazon* Blue 5GL for the production of popular fashion shades. It is suitable for printing on Orlon* and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Astrazon* Yellow Brown GGL

A new yellow-brown modified basic dyestuff recommended by the manufactuerers for dyeing polyacrylic fibers and said to have excellent light fastness and very good wet fastness. Its main use is as a base component for the production of beige, tan, and brown mode shades, as well as a shading component. Suitable for printing on Orlon** and Orlon**/wool blends.

*Registered trademark
**Registered trademark of DuPont

Benzamin* Black BH Conc

A direct and developed dyestuff for the production of economical navy or black shades on cotton and viscose. It is said to possess good levelling capacity and fairly good dischargeability.

*Registered trademark

Benzamin* Black OB Conc

Satisfactory for dyeing cotton and viscose as a direct or developed color. Recommended by the manufacturers as a direct or developed color (beta naphthol, Developer Z) for cotton or viscose fabrics containing acetate effects which are to be left white.

*Registered trademark

Diamond* Chrome Fast Bordeaux BL

A bright bluish-bordeaux chrome dyestuff said to possess excellent light and wet fastness. Recommended for dyeing stock, top, yarn, or piece goods as a self shade or in combination for mode shades. Suitable for the metachrome process.

*Registered trademark

Diamond* Fast Olive BRL

Diamond* Fast Olive BRL is a new chrome dyestuff said to possess excellent light and wet fastness, including good fastness to chlorine and cross-dyeing. It is mainly intended for the production of fast khaki and olive shades on stock, top, yarn, and piece goods, and is suitable for vigoreaux printing. Diamond* Fast Olive BRL can also be dyed on a chrome mordant.

*Registered trademark

Fast Blue G Base

Fast Blue G Base is a new and economical developer to be used in continuous dyeing with nonsubstantive naphthols, such as Naphtol AS, AS-D, and AS-MX, to produce navy blue shades with good to very

good all-round fastness properties. Fast Blue G Base can also be used in batch dyeing, eg on package machines with Naphtol AS-SW to produce economical navies with good all-round fastness properties. This product is dischargeable.

Isolan* Black GL and RL

These blacks represent two new and important neutral dyeing premetallized dyestuffs said to possess excellent light and wet fastness. Of particular interest is their good levelling properties, good solubility and very good light fastness, even in grey shades. Isolan* Black GL in comparison with Isolan* Black RL is somewhat greener and brighter in shade. Both products are recommended for dyeing nylon, silk, and unions.

*Registered trademark

Isolan* Orange GLS

A new bright brownish-orange neutral dyeing premetallized dyestuff said to possess outstanding light fastness and very good wet fastness. Excellent as a base component for the production of beige, tan, and brown shades and also as a shading component. It is recommended for dyeing of silk, nylon, and unions.

*Registered trademark

Naphtol AS-BJ

This product represents a new nonsubstantive Naphtol which produces predominantly brown and black shades. It is also recommended for the shading of other nonsubstantive Naphtols.

Naphtol AS-FGGR*

This represents an entirely new nonsubstantive Naphtol to be used for continuous dyeing only. It produces bright green shades not hitherto obtainable with available Naphtols. This product is said to have very good all-round fastness properties and is dischargeable. Chartruese shades can be produced with very good light fastness.

*Registered trademark

Naphtol AS-L4G Single

Naphtol AS-L4G Single is a nonsubstantive yellow naphtol which is said to have excellent light fastness, is dischargeable, and can be used in combination with Naphtol AS-FGGR*.

*Registered trademark

Pharmasol* Black CGF Double

This is an azoic black of neutral shade said to possess top all-round fastness properties, including fastness to formaldehyde.

*Registered trademark

Pharmasol* Black PNF Double
Pharmasol* Black 2GF Double
Pharmasol* Black PRF Double

These are economical azoic blacks said to possess good all-round fastness properties. As a group, they cover the usual range of black shades desired in azoic printing:

PNF—neutral shade
2GF—greenish shade
PRF—reddish shade

*Registered trademark

Pharmasol* Brilliant Green GL and 4GL

These products represent entirely new printing azoic greens which are said to distinguish themselves by extreme brightness of shade and excellent light fastness. It is claimed that bright greens such as these could not be produced up to now with available azoics.

*Registered trademark

Resoline* Red FB

With this new special dispersed dyestuff a bright red is offered for polyester fibers said to possess very good light and wet fastness and good fastness to sublimation. It is recommended as a shading component with Resoline* Blue FBL to produce bright shades of royal blue. This product is suitable for printing.

*Registered trademark

Resoline* Yellow 5GS

This new special dispersed dyestuff produces bright greenish-yellow shades on polyester fibers said to possess good light fastness and very good wet and sublimation fastness. In addition to its desirable self-shade, Resoline* Yellow 5GS is of particular interest as a shading color. In combination with Resoline* Red FB, it produces bright scarlet shades, and with Resoline* Blue FBL, bright greens can be obtained. This type is suitable for printing on polyester fiber.

*Registered trademark

Sirius* Supra Orange 7GL

A fast to light direct dyestuff which yields bright yellowish shades of orange on cotton and viscose. Recommended by the manufacturers as a yellowing component in combination with other selected Sirius* Supra colors whenever high fastness to light is desired.

*Registered trademark

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YOUNG ANILINE WORKS, INC
2701-2733 Boston St
Baltmore, Md

Acid Black BXCW

A purified type of Acid Black, CI 246, for dyeing wool which leaves acetate fibers white.

Acid Black RYAW

An acid black for dyeing wool which leaves acetate and Arnel exceedingly white.

CHEMICALS

ACETO CHEMICAL CO, INC
40-40 Lawrence St
Flushing 54, N Y

Aluminum Formate Powder

Aluminum formate powder is said to be three and one-half times more concentrated than most conventional solutions and to be more economical to use as a water proofing compound and dye mordant. It is a fine white powder with an exceptionally high alumina content, and is free of aluminum chloride and sodium sulfate. It is stated that its high active alumina (Al_2O_3) content of 31% together with a minimum of impurities, insure high yields and trouble free processing. In addition, its dry form represents a substantial saving in freight, storage space and handling as compared to solutions.

2:5-Dichloraniline

This is a versatile intermediate whose chief use is in the manufacture of the following pigments: Hansa Yellow R which is used in printing inks of all types and in emulsion paints, also in paper coating and in the coloring of urea and styrene resins, pastels, water and oil colors; Permanent Red FRL, used in paints, printing inks, linoleum, clay, wax compositions and cosmetics; Permanent Red FRR, used in paints, printing inks, alkyd resin enamels, lacquers and emulsion paints, wallpaper, linoleum, vinyl products and rubber; and Permanent Red FRLL, used in printing ink colors, linoleum, paper coating and wall paper, etc.

2:4-Dinitroaniline (DNA)

Dinitroaniline is an intermediate which serves two industries. It is used in dyestuffs in the manufacture of sulfur colors and in the pigment industry where it is coupled with beta naphthol to produce Permanent Red 2G or Dinitroaniline Orange. This pigment is said to be appreciably more brilliant and cleaner in mass tone than Hansa Orange RN and on dilution with white to yield a correspondingly cleaner orange tint. It is claimed that it has good light fastness in tints and is, therefore, generally accepted by the paint trade as a source of orange shades both alone and in combination with the Hansa Yellows and Iron Oxides.

Besides its uses in paint manufacture, it is used in printing inks, wallpaper, wrapper and metal foil printing; also for paper coating and dyeing, bookcloth, linoleum, artists' colors, wax compositions, rubber, urea and styrene resins. It is used also in textile printing and as a cosmetic color.

Empicol LZ Powder

Empicol LZ Powder is a concentrated grade of sodium lauryl sulfate. It is claimed to be a powerful, practically pure, anionic surface-active agent, with a minimum inorganic salt content. Because Empicol LZ has a low inorganic salt content and high purity, it is said to be ideal for use as a powerful wetting agent and emulsifier.

Empicol LZV Needles

Empicol LZV Needles is a dustless concentrated grade of sodium lauryl sulfate in needle form. Besides offering greater emulsion stability, the needles are said to eliminate the irritating dust problem accompanying the use of conventional sodium lauryl sulfate powder. In addition, it is claimed that the high concentration of active matter permits greater flexibility in formulations using sodium lauryl sulfate, while at the same time permitting economies in storage and handling costs.

AMALGAMATED CHEMICAL CORP
Rorer and Ontario Sts
Philadelphia 34, Pa

Acco Resin #10

Copolymer of vinyl acetate and higher acrylate in emulsion form. This copolymer is used for coating as well as for piece goods finishing. Acco Resin #10 is said to have excellent stability, small particle size and to yield a film which is tough, elastic and of excellent color.

Bansoft #6

Cationic type softener containing polyethylene. This softener is especially recommended by the manufacturers for finishing Banlon and Tycora. Not only does Bansoft #6 yield a full, smooth hand but is said to increase resistance to snagging to a very high degree. Reduction of static is an added advantage.

Evenate #40

A combination of detergents and levelling agents for the one-bath method of scouring and dyeing nylon hosiery. It is stated that this product gets hosiery really clean and yields full, even shades with excellent union between welt and boot. Evenate #40 has the added advantage of being a one product one-bath assistant.

Nionine TE

A balanced combination of detergents, wetting agents and emulsifiers for the washing of sweaters made of wool and other animal fibers. Nionine TE not only removes the oil and dirt from the sweaters but is said to leave the garment with a lofty, soft hand.

Velubra Softener S-29

A balanced combination of cationic softeners having a high degree of substantivity. It is stated that this unique softener not only yields a soft, full hand on Banlon, Tycora and Orlon but has the added advantage of efficient softening of animal fibers. Reduced static is also one of its desirable properties.

* * *

AMERICAN CYANAMID CO
DYES DEPT
Bound Brook, N J

Cyanatex* 992 Antifoam

This is a non-ionic silicone type of antifoaming agent and may be used over a pH range of 1.0 to 14.0. It is effective in extremely small concentrations, 0.001% to 0.100%, on the weight of the bath.

*Trademark

Cyanatex* 503 Sulfonated Castor Oil

This product has a high degree of sulfonation and a low content of unsaponified oil. It contains 60% active material and it is used as a dispersant and leveling agent for dyes and pigments in various textile processing baths, and as an emulsifier for solvents such as pine oil. The optimum pH range for use of this product is 6.0 to 10.0.

*Trademark

Cyquest* 40 Sequestering Agent

Cyquest 40, tetrasodium ethylenediamine tetraacetate, is said to inactivate di- or trivalent metal ions which, in the active form, are detrimental to many bleaching, dyeing and other wet processes. The active content of Cyquest 40 Solution is 38-40%. Maximum chelating efficiency for calcium and magnesium ions occurs above a pH of 7.5. Below pH, sequestering efficiency drops rapidly. In mildly acid or mildly alkaline and in neutral solutions, it sequesters iron effectively. 1 gram of Cyquest 40 sequesters calcium ions equivalent to 102.5 milligrams of calcium carbonate.

*Trademark

Deceresol* 18

This is a product which is said to be notable for its emulsifying, dispersing, and foaming powers, detergency, and solubilizing action on soaps and other surface active agents. It is a light, cream-colored paste containing 35% active ingredient, 65% water. It is stable in strong acid up to temperatures of 150°F. It is stable in alkali, specifically in sodium hydroxide. It does not decompose in prolonged heating at 180°F. Deceresol 18 is said to be particularly suited for and is highly recommended for preparing printing emulsions in the textile printing field.

*Trademark

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AMERICAN CYANAMID CO
TEXTILE CHEMICALS DEPT
Bound Brook, N J

Aerotex* Resin 23 Special

A new triazine based cross-linking agent. When applied to cellulosic fabrics, it is said to impart durable wet and dry wrinkle recovery with good resistance to chlorine retention under practical laundering conditions. This cellulose reactant is said to show low soil pick-up during washing, resist acid hydrolysis, does not inherently present a fish odor problem and exhibits a minimum of formaldehyde odor.

*Trademark

Cyanalube® TSI Softener

A nonionic emulsion which is said to impart excellent durable lubricating and softening properties to resin-treated cotton and rayon fabrics. This product also is said to improve tear strength, enhances wrinkle recovery, improve abrasion resistance and reduce needle cutting and yarn breakage in sewing.

Cyanatex® 3047 Softener

An anionic surface active agent providing wetting and rewetting action in combination with lubricating and softening properties. Especially useful as a rewetting agent in compressive shrinkage processing.

Cyanatex® 3103 Soluble Oil

An emulsifiable liquid which is said to provide the lubrication and rapid rewetting required in the compressive shrinkage processing of heavy or starched fabrics.

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ANTARA CHEMICALS
A DIV OF GENERAL ANILINE & FILM CORP
435 Hudson St
New York 14, N Y

Igepal* DJ-970 Flakes and Solid

Alkylphenoxypoly (ethyleneoxy) ethanol, 100% active. It is said to be the first solid nonionic with detergent properties which compares with liquid nonionics.

*Registered trademark

Igepal* DM-430—DM-710—DM-730—DM-880

Alkylphenoxypoly (ethyleneoxy) ethanol-type surfactants. 100% active. Of particular interest for emulsion polymerization and latex stabilization, as wax and fatty acid emulsifiers, and as solubilizing agents.

*Registered trademark

Igepal* RC-520—RC-630—RC-760—RC-890

Higher alkylphenoxypoly (ethyleneoxy) ethanol-type surfactants. 100% active. Of particular interest for emulsion polymerization and latex stabilization, as wax and fatty emulsifiers, and as solubilizing agents.

*Registered trademark

Peregal* AP

A highly effective nonionic dispersing agent for use in dyeing acetate, Arnel triacetate or polyester fibers with disperse colors, or in dyeing blends of these fibers, 75% active. Dyeing time can be reduced by use of the pad-jig application technique.

*Registered trademark

Peregal* LB

An effective, mildly cationic leveling agent for dyeing nylon with selected dyestuffs to minimize or overcome barré. 62.5% active.

*Registered trademark

Peregal* PM

A highly effective 50%-active nonionic retarding and leveling agent, said to be particularly valuable for dyeing metal-complex dyestuffs. It is stated that, with its use in the dyebath, neutral premetalized dyestuffs can be applied in the presence of acid (pH 4.5) to obtain excellent penetration and levelness.

*Registered trademark

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APEX CHEMICAL CO, INC
200 South First St
Elizabethport 1, N J

Apexcure

A series of organic and inorganic catalysts for all types of curing resins.

Bondapex #50

Etherized starch additive for curing resins which gives bulk, full body and hand. Permanent when cured with resins. Also can be used alone as a stabilizing finish on linings.

Celluset #1

Wash-wear type of reactant resin for synthetic blends and cellulosics. Clear, stable liquid which does not spoil. It is said to be durable to repeated launderings.

Celluset #2

Clear liquid, stabilizing resin claimed to have absolutely minimum chlorine retention. Superior shrink and wrinkle resistance after repeated launderings is also claimed. Excellent for knitted underwear and sportswear as well as woven goods.

Defoamer #58

Milky white silicone emulsion defoamer. Disperses readily without pasting. Said to be highly efficient.

Dycleer #98

Low-foaming dispersant for naphthols. Said to be excellent for soaping off, as well as for clearing vat-dyed packages.

Dyset #91

Resinous type dyesetter for direct colors. It is said to prevent bleeding in hot water as well as on hot wet pressing. Can be combined with curing resins, copper and other metals to withstand washing with soap.

Dysyn #427-A Imp

A nontoxic carrier for dyeing Arnel and blends of Arnel with Dacron and other fibers. It is stated that it does not impair the light fastness of most colors and remains active for the entire dyeing cycle. Can be used in jig dyeing.

Dysyn #700

A 100% active paste carrier for one-step dyeings on Dacron. It is stated that it produces maximum color value, dissolves readily, and is active for the entire dyeing cycle.

Ethapex #45

Nonionic polyethylene softener. It is stated that it is used with curing resins to provide maximum stabilizing action and abrasion resistance. Widely compatible.

Ethapex #46

Cationic polyethylene softener. It is stated that it is used with curing resins to provide desirable feel together with excellent resistance to needle cutting and abrasion. Does not cream on storage.

Ethapex #47

A cationic polyethylene based softener which can be used together with optical bleaches on whites without "blowing" the optical. Gives a high hand.

Retarder #624

Said to be a powerful retarder for Orlon dyeing. Efficient and economical.

Softener #95

Pure white soft paste with good surface lubrication and antistatic properties. It is stated that it is highly resistant to scorching, does not contain soap and is compatible with curing resins, metallic salt and organic catalysts without breaking out, and can be exhausted or padded on.

Velvalan #58

A purified lanolin softener for nylon and acetate tricot. Gives a silky finish.

Woolgard

Durable mothproofing agent for wool applied directly in the dye bath. Registered with U.S. Dept. Agr.

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ARKANSAS COMPANY, INC
P O Box 210
Newark, N J

Anthrapole* #73

A concentrated dye carrier in paste form which is said to be highly efficient in dyeing Dacron and Dacron blend piece goods. It is also effective in dyeing Darvan. In all applications, Anthrapole #73 is said to produce excellent color yield and bright level dyeings. It is non-volatile and, accordingly, there is no loss of active ingredient during the entire dyeing operation. Anthrapole #73 forms a stable dispersion in hot water and remains stable through the entire dyeing operation at the boil. No spotting of the goods occur under normal conditions of dyeing. The amount of Anthrapole #73 to be used depends on the

*Registered trademark

depth of shade, a maximum of 15% being required for dark shades and a minimum of 5% for light shades. In predispersing the Dacron dyes before adding to the bath, it is desirable to use a small amount of an anionic dispersing agent such as Dispersinol H P. After completion of the dyeing, the goods should be scoured to remove the residual carrier, and to eliminate crocking in the dyed goods. The scouring is preferably carried out using a nonionic detergent with minimum or no rewetting properties, in case fabric is to be treated subsequently with a water-repellent finish. The addition of an alkaline builder, such as tetrasodium pyrophosphate, is desirable in this scouring operation.

Dergopal* #58

A highly efficient whitening agent for use on nylon, Orlon, acetate and wool. It is particularly recommended by the manufacturer for application to nylon prior to heat setting without loss of efficiency. It is said to be resistant to bleaching agents including sodium chlorite, and may be used directly in the Textone bleach bath for application to Orlon. For this application, it should be applied at the boil for optimum results. For use on acetate and wool fabrics, it may be used directly in the peroxide bleach bath at 100°-120°F to produce superior whites on these materials. It is compatible with most anionic and nonionic surfactants, and may be used with softeners of these types. It is not recommended for use in the same bath with cationic finishes.

*Registered trademark

Dergopal* L A Conc

A highly efficient brightener for use on cotton and rayon fabrics. It is particularly applicable for use with thermosetting resins and is said to be highly resistant to high temperature curing. It is also very effective on cotton and rayon fabrics in the final rinse. In many such applications, as little as 0.25% on the weight of the fabric produces brilliant whites. Dergopal L A Conc is compatible with anionic and nonionic surfactants and softeners. It is not compatible with cationic softeners in the same bath, but can be used with satisfactory results where a cationic finish is to be applied in the last rinse.

*Registered trademark

Moth Snub* D Conc

A durable mothproofing agent for application to wool and wool blends. It is preferably applied in the dyeing process, but may also be used as an after-treatment and in the back-washing of dyed tops. It is said to be durable for the life of the garment to dry cleaning, to laundering, and to weathering, including exposure to rain and sun. It does not affect the hand or appearance of the woolen fabric or cause odor development. When used in connection with dyeing, it is added directly to the dyebath and the dyeing is then carried out in the usual manner during which the mothproofing agent is exhausted onto the goods simultaneously with the dyes. It is essential that Moth Snub D Conc be applied from an acid bath in all applications, and for optimum results a temperature of 140°F or over is required. It is said to be highly economical in that an extremely small amount of the active ingredient gives complete protection against moth and carpet beetle larvae. To obtain complete protection against moth and carpet beetle larvae, it is nceessary to use only four to eight ounces of Moth Snub D Conc per one hundred pounds of wool.

*Registered trademark

Poly-Ionic* N

A polyethylene softener of the nonionic type which is said to provide an excellent finish for all types of textile fabrics made from natural and synthetic fibers. It may be used alone or with thermosetting resins as applied to cotton and rayon fabrics. It also may be used with silicone water repellents such as Hydro-Pruf®, with dye fixatives such as Cobelfix® W F D and cationic softeners. Poly-Ionic N is claimed to have the following advantages:

1) Imparts a soft, full-bodied hand with outstanding surface lubricity.
2) Produces interfiber lubrication thus improving drape and sewability.
3) When used with thermosetting resins on cotton and rayon fabrics, marked improvements are obtained in abrasion resistance and tear strength.
4) Does not cause yellowing or discoloration when subjected to high temperature curing as in resin applications, or to ironing at elevated temperatures.
5) Nonchlorine retentive.
6) Does not develop odors on storage.

Poly-Ionic softeners of the anionic and cationic types are also available as Poly-Ionic A and Poly-Ionic C, respectively.

*Trademark applied for

Resipon* R T

A thermosetting resin of the triazone type, primarily for application to wash and wear cottons. The outstanding feature of this resin is said to be its high degree of resistance to chlorine damage when chlorine bleach is used in laundering. The strength of cotton fabrics properly treated with this resin is not appreciably affected after multiple home launderings with 0.1% to 0.2% chlorine in the wash. Also, mens' shirts made from white broadcloth treated with Resipon R T withstand regular commercial launderings with minimum adverse effect on the physical properties of the fabric. It is stated that, in addition to the excellent resistance to chlorine damage, Resipon R T maintains good crease resistance after multiple home launderings, and the appearance of the laundered garments is considered satisfactory according to "Wash and Wear" standards. This resin also is said to produce excellent shrinkage control on most cotton fabrics when applied at concentrations of 10% to 15%. As a catalyst for use with this resin, Catalyst D A is recommended, but magnesium chloride may also be used with good results. In all applications of this resin, it is absolutely essential to subject the cured fabric to an alkaline rinse to obtain satisfactory physical properties in the finished fabric.

*Registered trademark

Softener R K

A new type of cationic softener which, it is stated, in addition to its outstanding softening properties, is effective as an antistatic agent. It is said to be particularly effective for use on Orlon knit goods, and produces a soft, bulky hand. It also is said to impart excellent softening effects on many other types of fabrics containing synthetic fibers. When applied to Orlon and other synthetic fibers, the built-in antistatic properties of this product prevents the accumulation of static charges during the handling of the fabrics thus treated. This softener has no tendency to yellow under normal conditions when applied to whites and pastel shades.

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ARNOLD, HOFFMAN & CO, INC
55 Canal St
Providence 1, R I

Ahcovel* P
Ahcovel* P Conc

Cationic substantive softeners designed for economical yet efficient use in resin finishes or alone. They are said to possess good heat and scorch resistance and give a pleasant soft hand and good tear resistance. They do not impair tensile strength.

*Registered trademark

Ahcovel* RX

An anionic processing lubricant for use in the manufacture of carpet yarns. Wool, viscose rayon, and blends of these fibers treated with Ahcovel RX are said to have a dry, lofty hand, and possess excellent resistance to soiling during processing and regular use. As a processing aid, Ahcovel RX is said to eliminate apron glazing, reduce fly, increase roving quality and improve spinning characteristics.

*Registered trademark

Ahcovel* T

A new and truly universal textile softener, effective on cellulosic and most man-made fibers. It is easy to handle, compatible with most resin/catalyst combinations and low foaming. Important performance features are said to include resistance to yellowing, scorching, odor development, chlorine retention damage and strength degradation. It is stated that it gives durable fiber and yarn lubrication and softness, and has some antistatic properties on hydrophobic fibers.

*Registered trademark

Synthrapol* GP

A nonionic general purpose surface-active agent chemically described as a polyoxyethylated nonyl phenol. It is a clear pale yellow to water-white viscous liquid with a mild pleasant odor. Solubility characteristics, chemical stability, detergency, wetting and dispersing power, and compatibility with other surface active materials are said to make it useful in a very broad range of applications.

*Registered trademark

Synthrapol* SP

A detergent blend recommended especially for scouring Procion dyed or printed materials, but suitable also as a highly efficient general-purpose detergent for all fibers both preparatory to dyeing and after dyeing. Also highly recommended by the manufacturer for soaping off azoic dyed and printed goods to give maximum rubbing fastness.

*Registered trademark

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BURKART-SCHIER CHEMICAL CO
Chatanooga, Tenn

Burkote "F" Series

New foam-in-place or foam-on-fabric latex compounds for carpets, rugs and other textiles. For continuous processing. Engineering and technical assistance provided.

Fire Retardant RC

A new and improved fire retardant of the soluble salt (renewable) type. It is said to have much better resistance to high temperature drying and/or heat aging. Imparts both flame resistance and freedom from afterglow. It is stated that it is highly soluble and easily and economically applied. Minimum effect on hand and colors.

Peem

Polyethylene emulsion. Softener, lubricant and finish for yarns and fabrics. Compatible with resins and catalysts. It is a stable emulsion forming dispersions of fine particle size.

Spotnik

Pre-spotting agent for textiles—applied to spots and stains before wet processing. It may be left on goods for long periods between application of spotter and subsequent wet processing. It is stated that it does not cause dyespots or uneven bleaching. Mild pleasant odor. Nontoxic.

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CARBIC COLOR & CHEMICAL CO, INC
451-453 Washington St
New York 13, N Y

Imine IP

For permanent flameproofing of cellulosic materials. Imine IP is tris (1-aziridinyl) phosphine oxide which forms polymers by reacting with tetrakis (hydroxymethyl) phosphonium chloride, referred to as THPC. While THPC as such is a flame retardant, it is stated that it is not fast to washing and impairs the tensile strength and hand of cotton. It is further stated that neither do flame retardants based on THPC and other resin-forming products show adequate properties.

Cellulosic material treated in 1:1 molar ratio with Imine IP and THPC is claimed to be permanently flameproofed and the flame resistance is not diminished by re-

peated washings. Material treated with Imine IP and THPC is said to pass the flame test after a 3-hour boil in a solution of 0.5% soap and 0.2% soda ash if 10% of combined resin are on the fiber. It is further claimed that the treatment does not affect adversely the tear and tensile strengths of fabrics, neither does the resin show any chlorine retention, and materials treated that way also show a very good resistance to mildew and rot.

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CHEMICAL PRODUCTS CORPORATION

Lackawanna Avenue
West Paterson, N J

Acrylo Resin 90

An acrylic copolymer resin useful in "Wash & Wear" formulae. It is said to provide a durable finish and improve wear and abrasion resistance. Applicable to cotton, rayon, nylon, Dacron and other synthetic fabrics. Acrylo Resin is an effective pigment, clay and color binder in water-based printing and paints for textile and paper. It is said to increase resistance to pilling, fraying, raveling & slippage. Its film is clear glossy, fast to light, grease and water resistance.

Anti Fume H

A gas fading inhibitor which produces a stable emulsion at all dyeing temperatures. As it exhausts evenly and uniformly with the dyestuff, it is said to produce a uniform and level gas fading protection. Chem Anti Fume H is said to impart on acetate and rayon fabrics an unusually high resistance to yellowing or staining, and is unaffected by normal perspiration. It is stated that its inhibiting efficiency withstands repeated laundering and dry cleaning.

Chem D B G

A durable bactericide, germicide and sanitizer for long lasting control of bacteria, germs and diseases. It is safe, nontoxic and is said to impart a high degree of permanency and fastness to high temperature scouring and repeated laundering. It is claimed that D B G treated cloth showed, after 5 or more washings and launderings at 135°F excellent and complete bacteriostatic properties. Tests and certifications were performed by independent bacteriological laboratories.

Chem Duller C D

A light shade duller, cationic in nature and non-foaming. It is compatible with neutral and acidic materials over a range of pH 3 to 7, such as urea and melamine resins, vinyl, acrylic resins and weighters. Contains resins to bind, and only the purest titanium; contains no lead, zinc, calcium, magnesium, silicon pigments, nor clays, nor bentonite. Imparts a smooth, full, drape hand. It is said to be particularly effective on nylon and synthetic fibers.

Chem Duller N

A nonionic, light duller, non-foaming, compatible with nearly all anionic and cationic finishing agents, resins and gums. It is stable over a wide range of pH, 3 to 11. It contains resin and only the pure titanium pigments with no zinc or calcium pigments nor clays. It is said to impart a smooth, full hand without powdering out.

Chem ND

A nylon detergent with solvent and emulsifier action which removes graphite, grease, wax and soil stains, from nylon and other synthetic fibers. Its selective solution effect on the surface of nylon and other fibers, as well as its fast penetrating and wetting action is said to enhance its efficacy as a scouring agent at both cold and boiling temperatures. Chem ND is non-foaming, compatible with bleaching and desizing agents and effective in hard water.

Chem Softener C

A cationic softener which imparts durable softness and resists discoloration of whites at high temperature. It has been specifically developed for use with urea and melamine formaldehyde resins, as a plasticizer and softener without impairing the crease resistance or stabilization. It is compatible with dilute solutions, acids, alkalies and electrolytes and is compatible with nonionic and cationic finishing agents.

Chem Softener MOR

A softener which is mildly cationic in nature; developed particularly as an effective softener for Orlon, Dacron and other synthetic fibers. It is said to possess a good degree of permanency, resistance to laundering and yellowing by heat and light.

Chemsol N

An efficient, nonionic, non-lathering detergent, said to possess fast wetting and high penetrating action for nylons, cotton, synthetics, fibers and yarns. It is said to be exceptionally resistant to, and effective in acid, alkali and salt solutions and hard water.

Color Fix

Color Fix is a resinous, cationic agent. It is said to improve color fastness to water, perspiration, washing and to steam pressing. It improves fastness of direct dyeings on cotton, rayon and cellulose fibers, knitted or woven fabrics. It is further said to retard bleeding and crocking of colors. It is effective and stable under high salt concentrations and at temperatures as high as 160°F. It may be used with urea or melamine formaldehyde resins in the same bath. With copper and metallic salts it increases dye fastness to washing.

Repellent 95A

A nonionic water repellent which is comprised principally of a highly active solid water resistant, nonhydroscopic wax. Its fine emulsion is stable to acid, alkali, high salt concentration and exceptionally resistant to hard water over 2,000 ppm. It is compatible with aluminum acetates, formates or respective zirconium salt. It is said to impart a soft full smooth hand with high stain and water resistance.

Repellent Z

A water repellent of the zirconium type which is said to provide a durable and lasting water repellency and is applicable to cotton, rayon, acetate, nylon, Orlon and blends. Repellent Z is said to produce a fine stable homogenous emulsion and therefore retards spotting of goods, build-up of wax on rolls and bleeding of color. It yields a soft round mellow hand in addition to a high water repellency. It is stated that the treated fabric will be stain, spot resistant and will breathe easily as the pores of the fabric are open.

Resin 61-O*

A ribbon finish and sizing consisting of a non-curing, water white resin concentrate. It is said to provide a full bodied, firm, lustrous finish for satins, taffetas, acetates, rayons and nylons in uses for blanket binding and linings. Does not discolor and remains odorless. Its finish possesses high gloss and minimum mark-off. It may be used with water repellent in one operation.

*Patent pending

Resin 100

A thermosetting durable resin (urea formaldehyde syrup) which is said to provide a medium firm lively and excellent crush proof, shrinkage control finish on rayons, cottons, acetate or blends.

Resin 909

An alkyd clear resin which is said to impart a medium, firm, full body and round drape finish. It is non-curing and leaves no mark-off. Its finish on satin acetates and rayon fabric is lustrous.

Resin E

A cyclic urea formaldehyde resin which is a thermosetting and fiber reacting resin. It is fast curing and said to possess outstanding durability to laundering and dry cleaning. It withstands effects of chlorine bleach after washing. Resin E is compatible with nearly all resins, water repellents, softeners and finishes. It is said to prevent formaldehyde odors in treated goods. It produces a durable resiliency and fullness without boardiness. It is claimed that it provides the basic resin for all "wash & wear" finishes. It is used for fabric embossing, residual pleating and glazing.

Resin Gum

A resinous binder which reacts chemically with formaldehyde resins producing a durable, full-bodied, resilient finish said to possess improved tensile strength. It is compatible with almost all finishes, softeners, repellents, oils and resins. It is stated that it imparts a crisp, full-bodied, firm, lively and resilient finish which will withstand dry cleaning and considerable handling with no mark off.

Resin 84H

A urea formaldehyde high solids syrup. A viscous thermosetting high polymer resin which is said to produce a full body bulky, firm, finish on viscose, cotton, acetate or blends. It is further said to provide effective shrinkage control and high crush resistance.

Resin NF

A nylon finish. A thermosetting durable resin, alkylated urea formaldehyde which is said to provide stabilization, firmness and resilient crease resistance on synthetic and natural fibers. It is stated that, particularly on nylon, silks, Dacrons, marquisettes, sheers, taffetas, it yields a parchment papery effect. It produces a durable clear embossing and glazing finish on cottons, acetate and rayon blends which is resistant to washing and dry cleaning.

Resin YT*

A ribbon finisher and stiffener which is said to provide a dry lustrous, firm, papery, parchment effect, without mark-off. It is specifically designed for ribbon, satin, acetate, and rayon finishes. It may be used with water repellent in one operation. It is stated that it is established and proven as nonhydroscopic. The ribbon finish cuts cleanly with least fraying and slippage.

*Patent pending

Velveteen ST

A nonionic cream softener which is said to impart a smooth, velvety silk finish with limpness. It is claimed that it possesses exceptionally high resistance to yellowing or discoloration caused by heat or aging. It is compatible with nearly all anionic and cationic finishes, as well as salts, weighters, resins and repellents.

Wash and Wear Resin EL

Resin EL is said to provide high crease resistance and stabilization with minimum loss in tensile strength. It is compatible with urea, melamine resins, softeners and most finishing agents. The soiled fabric is first laundered or washed then dried and worn with no ironing. It is said to withstand effects of bleach with no chlorine retention.

* * *

CIBA COMPANY, INC

627 Greenwich St
New York 14, N Y

Catalyst 192

This is the recommended catalyst for use with Ciba's Lyofix PR and Phobotex FTA finishes, to give best physical properties to the fabric and maximum resistance to chlorine in laundering. Catalyst 192 can also be used with other thermosetting resins, such as, the cyclic ethylene urea types. The catalyst is very stable in solution.

Lyofix* PR

A new modified urea-formaldehyde product, Lyofix PR is designed to overcome some of the major weaknesses of such finishes on cottons and rayons. It is said to offer lower strength loss than is usually had, with less effect on light fastness of dyeings. The normal wrinkle-resist effects can be modified to include water repellency, softness, better sewing qualities, and so forth.

*Registered trademark

Phobotex* FTA

This new Ciba development in the field of durable finishes for textiles is said to produce fast-to-washing water repellency with little or no effect on air permeability. It is effective

*Registered trademark

on all natural and man-made fibers, and may be applied alone or in combination with urea-formaldehyde or melamine-formaldehyde resins for wash-and-wear or drip-dry finishes. It is stated that no unpleasant odors develop in processing when Phobotex FTA is used alone, and it is not necessary to wash the goods after curing.

Retarder A

A new dyeing development, this retarding agent is used in controlling the exhaustion of basic dyes on Orlon* 42 and Acrilan** 16. Readily soluble in water and stable in boiling dyebaths, it slows down exhaustion to give better levelness, and is especially effective with light and medium shades.

*Dupont trademark
**Chemstrand trademark

Sapamine* WP

This is a new kind of heat-setting finishing material that is said to produce durable softening effects which are fast to repeated laundering even at the boil. It is effective on all natural and synthetic textile fibers except wool. Applicable by exhaust or padding methods, it is applied with an acid-forming catalyst, followed by drying and heat treating to obtain maximum fastness of the softening effect. Use of the product with thermosetting resins is said to provide an excellent hand.

*Registered trademark

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COLTON CHEMICAL CO
6626 Union Ave
Cleveland 5, O

Vinol CWS

A cold water-soluble polyvinyl alcohol for textile sizing. Solutions containing up to 30% solids may be obtained easily and quickly by dispersing Vinol CWS in tap water at room temperature. Heating, by means of a steam jet or water jacket, minimizes even further the time required to prepare solutions. It is stated that films deposited from the solutions are clear, tough, flexible, and readily redissolved in water. Advantages claimed include: excellent behavior on the Calloway slasher and the shed tester, minimum tendency for foam formation at the size box, no difficulty encountered in weaving yarn at relative humidities ranging from 40 to 100%, and a very low B O D.

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CONTINENTAL CHEMICAL CO
195 Twenty-first Ave
Paterson, N J

Conco Finish PEN

A polyethylene emulsion designed to soften all fabrics and to prevent abrasions; the hand is said to be sleek and smooth.

Concofix T

A new direct dye fixative designed to prevent crocking and bleeding, improve fastness to laundering and perspiration with little or no effect on hand and with minimum effect on light fastness.

Concoset 660

A highly concentrated urea formaldehyde polymer with very good storage life, which is said to impart crushproofing, wrinkle recovery, shrinkage control, and good tensile strength to cotton and rayon fabrics.

Conco Super White TC

A highly concentrated pure dispersion of 100% titanium, for white and discharge grounds.

Detergent GAS

For knitted, tricot, or lace fabrics; a scouring agent to remove graphite grease and oils.

Detergent K

A solvent scour of 100% concentration which may be used for all scouring and soaping operations and which itself may be used to further emulsify 10 times its own weight in Varsol, etc.

CREST CHEMICAL CORP
225-235 Emmet St
Newark, N J

Azacrest

A nonionic surfactant which serves as a general dyeing assistant for most fibers. It is stated that Azacrest is particularly recommended for the dyeing and stripping of vat dyestuffs. It is claimed that this product retards the vat dyeing operation in the important early part of the dyeing operation. Azacrest reportedly permits the vat dyeing operation to proceed at a controlled rate giving level dyeings with no loss of color.

Crestex Dyesist

An agent used to obtain level dyeing with difficult-to-disperse basic dyestuffs and to prevent blacks from bronzing.

Crestkelate FE

A liquid organic complexing agent of the polyamino carboxylic type used to control calcium, magnesium and especially iron. It is claimed to be extremely effective for iron in alkaline solutions. The manufacturer reports that Crestkelate FE prevents or inhibits the deleterious effects of these ions in many operations where traces of these metals are harmful.

Crestobond Resin 9300

An etherized glyceryl phthalate resin used to impart a weighty, thick, nonmark-off handle to synthetics, especially acetate and acetate blends. It is also recommended by the manufacturer for finishing foulards, jacquards, ninons, and satins. The manufacturer claims that Crestobond Resin 9300 gives an anticurl and antislip finish as well as a heavy hand. This product is supplied in concentrated form as a light-colored viscous liquid.

Crestofix

A new improved cation-active resin fixative, which is said to impart the same fastness to selected direct dyes for cotton and rayon that is obtained with more expensive dyestuffs. It is reported that the use of this product minimizes changes in shade and lightfastness. Crestofix is said to eliminate bleeding and staining of prints during wet handling and wet processing, to eliminate staining of discharge prints when ground has been dyed with direct colors, and to be useful in dyeing or printing when applying various resin finishes.

Crestomite Base N

An amine condensate which is said to offer many advantages over the conventional condensates now being used by textile mills. This surfactant reportedly shows improved wetting action, sudsing, suds stability and detergency; and, in contrast with conventional amino condensates, is said to display excellent surface activity in hard water. Crestomite Base N is reported to be an excellent emulsifier for natural oils, greases and solvents.

Crestoperm Resin XX

An alkylated urea-formaldehyde resin recommended by the manufacturer for outstanding crease-recovery and shrinkage control of hydrophobic fibers, rayons and rayon-acetate blends. Crestoperm Resin XX is said to be used also to obtain permanent mechanical effects such as embossing and glazing. It is claimed to have outstanding storage and bath stability.

Crestosoft CW

A substantive cation-active softener in the form of a white paste readily soluble in warm water. It is stated that Crestosoft produces an extremely soft hand on synthetic fibers, that it has a minimum effect on lightfastness and shade of dyed fabrics, and that it does not discolor whites. Application can be made in the rinse after dyeing or by padding in the finishing operation. Crestosoft, it is said, is used with resins or as a top softener after resin treatment. It is claimed to possess high substantive affinity for textile fibers and impart a high degree of absorbency to cotton, rayon and blends.

Crestosol

A sulfonated fatty amide which is said to be a powerful all-purpose surfactant unaffected by acid, alkalis or hard water. It is stated that this product is a smooth white paste recommended for soaping prints, scouring all types of textiles, as a leveling agent in dyeing, and for eliminating scum formation.

Crestowax 415

A cationic, substantive, very-light-colored wax which is reported to be a remarkably versatile product showing excellent softening action on cotton, rayon, nylon, Orlon and Dacron. It is stated that Crestowax 415 produces a full lofty hand, shows no alteration of shade of pastel colors, or yellowing of whites. This wax is reported to be 100% active and is offered in the form of small solid chunks which are readily soluble in water to form the softener solution.

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CROWN CHEMICAL CO
240 India St
Providence 3, R I

Estrafix NF

A cationic dye fixing agent for after-treating direct dyed shades to improve fastness to water, laundering and perspiration.

Melltone 100

A highly concentrated nonionic softener designed for use in resin finishes to impart softness and lubricity. Contains less than 3% moisture.

Syncap M

A chlorine resistant thermosetting resin for use on cotton fabrics. It is said to impart high crease resistance and dimensional stability with little loss in tensile strength. Is said to have excellent durability.

* * *

E F DREW & CO, INC
15 East 26th St
New York 10, N Y

Drewclad®

A 20% self-emulsifiable preparation of HEOD.* Drewclad is said to be a permanent mothproofing agent for wool. The cost of application is less than one cent per pound of wool. Drewclad is applied under a quality control program to be sure that the wool meets specifications for permanent mothproofing protection; wool treated under this program is certified and approved by the United States Testing Company, Inc.

*Hexachloroepoxyoctahydro-endo. exo-dimethanonapthalene

Druso 2HVS—Liquid

A complex fatty-amide anionic blend. Druso 2HVS Liquid is said to possess true fulling action on woolen and worsted pieces with milling, cover and shrinkage. Druso 2-HVS is said to rinse very fast and work to excellent effect in processing cashmere and lambs wool sweaters.

Druspin Supreme

A universal antistatic fiber lubricant for all processes of manipulating assemblies of wool fibers into worsted top and worsted yarn by any system.

Druterge KBE-200

Kier boiling efficiency at 200°F. A detergent specially designed to obtain level dyeing of cotton when used in blends with synthetic fibers. Recommended by the manufacturers for all cases where it is not feasible to kier boil the fabric, yarn or raw stock but where nevertheless, it is desirable to obtain kier boiling efficiency so far as the cleansing action of the kier boiling liquor is concerned in its relation to the removal of pectins, waxes, etc. Also useful in dyeing and finishing operations.

Drutone BL
Drutone BP

Drutone BL is a 25% active white liquid and Drutone BP is a 35% active white liquid. The Drutones are designed to eliminate many of the shortcomings in sulfonated tallow and to form an unbroken flow of finish about the fabric. It is stated that the hydrophobic-saturated hydrocarbon chains will orient themselves parallel to each other to

give the most even coating to the fibers, resulting in a better finish. It is further stated that it is this smoother and more even distribution that enables the higher quality Drutones to compete with sulfated tallow on a money value basis.

Super Tallow

A super concentrated softener produced to replace sulfonated tallow and is said to possess important advantages from the point of view of cost and quality.

Syn-O-Tol V/LS

An amine condensate that is said to impart the soft, moist handle representative of high quality woolen goods.

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E I du PONT de NEMOURS & CO, INC
ORGANIC CHEMICALS DEPT
DYES AND CHEMICALS DIV
P O Box 386
Wilmington 99, Del

Acetamine* Developer BON

Acetamine Developer BON is a product that has been especially designed as a textile developer for acetate dyes. It is said to possess outstanding wetting out properties, ease of handling and can be recommended where these characteristics are of importance.

*Registered trademark

Avitex* Q Softener

Avitex Q is a highly effective cationic-type softener, particularly designed for use in textile finishing. It is in the form of an aqueous paste which disperses readily in water at temperatures of 140°F or higher. The order of addition is not critical. Avitex Q imparts a lubricated, pliable hand and is said to possess versatile characteristics, being suitable for use either alone or in conjunction with starches, gums, thermoplastic, thermoreactive or thermosetting resins on cotton and synthetic fibers.

This new softener has a high resistance to discoloration and odor development during application or storage of the treated fabric. Fabrics finished with Avitex Q are said to show excellent resistance to yellowing when exposed to atmospheric oxides of nitrogen. Application is carried out either by padding or by exhausting from a long bath. It is stated that it has a high substantivity for cotton, rayon, nylon and other synthetic fibers in a dilute bath application, and a 90% to 100% degree of exhaustion can be readily obtained.

*Registered trademark

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EASTERN COLOR & CHEMICAL CO
35 Livingston St
Providence 1, R I

Dacrol 506

Completely nontoxic, water-soluble emulsion, Dacron dyeing assistant and carrier. Single addition to dye bath is said to yield maximum color and even, nonspotty dyeings.

Dacrol D

Modified, phenolic-based, Dacron dyeing assistant and carrier. Single addition to dye bath is said to give maximum color value and even, nonspotty dyeing. Volatile solvent necessitates ventilation in dyeing. Readily dispersible in water.

Eccofix 101

Resinous, substantive dye fixing agent containing 40% active solids. Useful in fixing direct color to reduce bleeding and wet crocking. Does not affect shades or lightfastness.

Ecco FM-501

Nonionic, polyethylene emulsion containing low molecular weight polymers said to give greater softness, increased abrasion resistance, improved tear strength and sewability. Particularly applicable to nylon and glass fabric.

Gloprint Conc—Binder

Highly concentrated, economical, aqueous printing extender and binder for screen and roller printing. It is said to give excellent color value and binding properties on all fabrics. Used at 10% concentration to give a printing extender of desirable consistency.

Metaglo 33-A

Resin-based, aqueous, roller printing binder and extender for printing gold powder on all fabrics including glass fabric. It is said to have excellent flow and printing properties, with good luster and bonding. Durable to laundering and dry cleaning; requires mild curing.

Metaglo 3-F

Resin-based, aqueous screen printing binder for printing gold powder and pigment colors. It is said to give excellent and lasting luster and bonding of gold powder to all fabrics, including Fibreglas. Durable to wash and dry cleaning; requires mild curing.

Raneoff D

A modified, resin-based, durable water repellent to give durable spot resistance and water repellency to cottons and synthetics. Applied alone or with thermosetting U-F resins and will supplement crease resistances and shrinkage control. Requires curing. Catalyst RD also available for use with Raneoff D.

Raneoff S

A nonionic, liquid, silicone, water-repellent emulsion. Contains 30% active silicone to give durable water repellency to synthetic and natural fibers. In addition, it is said to give softness and sewability and improved abrasion resistance. Compatible with resinous finishing baths; requires curing. Catalyst SL Conc available for use with Raneoff S.

Retarder O-42

Cationic, organic condensate, dyeing retarder designed for use with Orlon 42 type acrylic fiber to give level, even dyeing. Used in dyeing Orlon 42 alone or in blends, with basic dyestuffs, particularly in obtaining evenly dyed, pastel shades.

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EMERY INDUSTRIES, INC
Cincinnati 2, O

Emery 3198-S Lubricant

A water-soluble antistatic lubricant for natural and synthetic fibers. It is said to give superior static control and good lubrication at relatively low concentrations of application. Emery 3198-S and its water solutions have low viscosities, can be used in all conventional application systems.

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EMKAY CHEMICAL CO
319-325 Second St
Elizabeth, N J

Emkabase CA

A long chain, fatty amide base. This cationic emulsifier has a high capacity for selected mineral oils. One volume of Emkabase CA mixes with ten volumes of mineral oil to produce brilliant liquids, which are strongly cationic in nature and adhere to many fibers. Emkabase CA is stable to many acidic and neutral conditions.

Emka Defoam BC

A nonionic defoamer. It is used as a general defoamer where foam or frothing is objectionable. It is said to be effective under acid and alkaline conditions. Emka Defoam BC disperses readily in water systems and is compatible and active in most liquors. It is economical in use in low concentrations

Emkalar MN

An aromatic ester blended with suitable emulsifiers and leveling agents. It is used to accelerate the dyeing of Arnel* and other synthetic fibers where the use of "carriers" is indicated. Emkalar MN does not contain any chlorinated solvents or toxic phenolic derivatives. It readily forms stable dispersions in the presence of selected dyestuffs. This helps simplify the dyeing operation.

*Celanese fiber

Emkapon DAC

A blend of selected solvents with suitable synthetic detergents and emulsifiers. This novel scouring agent is specifically designed for efficient removal of wax sizings from Dacron* greige goods, giving a good foundation for good dyeing. Dacron* goods scoured with Emkapon DAC are said to absorb dyestuffs with excellent color yields. Emkapon DAC is designed for simple application and use.

*Du Pont fiber

Emkatex DX

A phosphated high molecular weight alcohol. It is used for stabilizing solutions and dispersions. It is also used as a leveling agent and stripper. In addition, Emkatex DX is said to have excellent resistance to alkalies, acids, etc.

Rexobase BAT

A synthetic detergent with high emulsifying properties. Rexobase BAT can be used "as is," as a scouring agent. It can also be used, when cut with an equal volume of Varsol or Stoddard's Solvent, as an efficient solvent scour. It finds application in alkaline, neutral and acid baths.

Rexoclean RC

A blend of solvents and selected synthetic emulsifiers. This cleaner is used to remove deposits without scouring or scrubbing, minimizing possible injury to fabrics, metals and rubber surfaces. It is said to remove sizes, oils, greases, dyestuffs, resins, waxes, latex compounds, hosiery finishes, etc. It reaches the corners and tough-to-get-at places. Rexoclean RC is said to penetrate very quickly and can be flushed with cold water, rinsing off easily.

Rexole LA

A lanolin-derived softener. This finish is used on "Helancas" to obtain a dry, well-lubricated hand. It is used where the desirable properties of lanolin are required for a finish. Rexole LA is easy to apply and can be mixed with other finishes to get combination effects.

Rexole NSCA

A fatty ester reaction product. This condensate is used in the finishing bath to give a "crunchy" scroop to rayon and nylon fabrics. Rexole NSCA, a neutral material, does not require an acid condition to produce the scroop effect. It can be used in the presence of selected flame-proofing chemicals, so that both scroop and flame resistance can be obtained from the same bath.

Rexolube AC

An organic acid blend. It has been found of interest in dyehouses where diazotizing and developing is done. Its use, before developing, is said to eliminate streaky and bronzy conditions which originate from faulty removal of the nitrite. Time consuming rinsing for nitrite removal is said to be materially reduced where Rexolube AC is employed.

Rexoscour SF

A blend of selected soaps and builders. This scouring agent is used both for scouring and fulling of woolens and worsteds. Rexoscour SF is designed for easy application and use for maximum scouring and fulling action.

Rexosolve BCT

A blend of solvents and highly active detergents. This product is used as a spot removing agent for dyed Dacrons*. It is stated that Rexosolve BCT can cleanse and salvage, for light or medium shades, most spotted pieces which ordinarily would have to be stripped, redyed or put into black. It is easy to use and easy to store.

*Du Pont fiber

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FARBWERKE HOECHST AG
VORMALS MEISTER LUCIUS & BRÜNING
Ffm-Hoechst, Germany

Emigen® P

Emigen® P is a new auxiliary for padding developed and marketed by Farbwerke Hoechst AG. The product is said to prevent the dyestuff from migrating during the intermediate drying of padded goods. Goods padded with Emigen P are said to exhibit excellent dyeing through and levelness. Even on materials straight from the loom and not desized successful results are obtained. The product is very simple to handle. It is dissolved with water and the solution then added to the padding liquors. Emigen P can be used in combination with Indanthren®, Anthrasol® and Remazol® dyestuffs, and furthermore with sulfur and substantive dyestuffs.

FINETEX INCORPORATED
418 Falmouth Avenue
East Paterson, N J

Accelerit A-698

A new accelerant designed especially for Arnel*. It is said to give full, clear shades of high tinctorial value. Can be used for Arnel* alone or in mixed fabrics in amounts of 2% to 10% OWS.

*Celanese trademark

Accelerit A-8188

A new accelerant for general use on synthetic fibers. Nontoxic in dyeing procedures or on the fabrics. Excellent tinctorial power with dispersed colors is claimed.

Accelerit AD-710

A new accelerant designed especially to give maximum color and levelling effect when dyeing combined mixtures of Dacron* and Arnel** fibers. Will also act as accelerant for other synthetics and mixtures.

*Du Pont trademark
**Celanese trademark

Accelerit D-78

A new and outstanding accelerant for Dacron* and other synthetic fibers. An accelerant is an agent which makes the dyeing of many fibers possible. It is stated that it does not move the shades of dyes toward yellow. Used in amounts of 2% to 10% of weight of polyester fibers present. A self-dispersing liquid which is said to give a good emulsion in water. Recommended by the manufacturers for use with acid dyes on nylon.

*Dupont trademark

Accelerit D-78-TS

The dispersibility of acetate colors used to dye synthetic fibers varies considerably. This accelerant has been developed especially for use with difficultly dispersible dyes, although, it will work well with any of them. The spontaneous emulsion that Accelerit D-78-TS forms in water is said to be so fine in particle size that it assists in dispersing otherwise difficultly dispersible colors. It gives a blue-white emulsion in water. Recommended by the manufacturers for dyeing Dacron* and it blends with other fibers.

*Du Pont trademark

Emolex 9158

Cationic softener which does not discolor and is said to give excellent softness to cellulosic fibers. Gives a fulling effect when used in conjunction with resin stiffening agents.

Emolex A-133

A white, pearly paste for softening cottons and other fibers. Cationic and substantive. Applied at pH below 7.

Emolex C-8128

A new white cationic softener which is said to combine great softening effect with no discoloration on long fabric storage, as evidenced by scorching tests. It also is said to have excellent water solubility even in tap water. Suitable for cellulosics, nylons and other synthetic fibers.

Emolex M-115

A cationic heavy, opaque, white paste, odorless. It disperses easily in hot water to give almost colorless solutions. It is said to be especially good for cottons and rayons. May be applied on beck in last rinse or on padder or quetsch.

Emolex S-101

A cationic softener of general application to a variety of fibers including synthetics and cottons. It is stated that it has excellent solubility and softening power, minimum discoloration on "scorch" tests, excellent compatibilities, and antistatic properties.

Emolex T-918

An inexpensive cationic softener expecially recommended by the manufacturers for cottons and rayons.

Marval-Dri*

A nonionic wax-metallic salt water repellent said to be of excellent stability and good repellency. Compatible with polyvinyl acetate solutions.

*Registered trademark

Marval-Dri* 728

A cationic water repellent said to require not more than 5% OWS for 100 spray rating on cotton or rayon. Substantive to wool; may be applied to woolen piece goods on jig or beck OWF. Being cationic and substantive, it is said to resist washing under specified conditions.

*Registered trademark

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B F GOODRICH CHEMICAL COMPANY
A Division of The B F Goodrich Company
3135 Euclid Ave
Cleveland 15, Ohio

Geon* 970 x 11

A nonionic polyvinyl acetate latex. Especially small particle size results in excellent binding characteristics. Combines well with nonionic acrylic latices such as Hycar 2600 x 30 and Hycar 2600 x 39 to yield colorless binding systems of varying hand and resilience.

Hycar* 2600 x 30

An acrylic nonionic latex containing reactive carboxylic groups. Used as a colorless binder, backing, and sizing agent. Also a permanent softener for resin finishes and a binder for non-woven fabrics.

Hycar* 2600 x 39

A modified acrylic nonionic latex. Used as colorless binder, sizing, and backing for fabrics. Excellent adhesive for cellulosic materials.

*Geon and Hycar are trademarks of The B. F. Goodrich Company

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GEIGY DYESTUFFS
DIV OF GEIGY CHEMICAL CORP
Saw Mill River Road
Ardsley, N Y

Chloregal* D

A product for controlling the rate of chlorination of wool for uniform shrinkproofing and subsequent level dyeing. The Chloregal process is reputed to offer economies, to restrict wool damage to a minimum, and to offer storage stability of whites and pastels. Wool in any form including slubbing, knitgoods, woven material and yarn can be processed with the aid of Chloregal D.

*Registered trademark

Tinegal* BL

Tinegal BL is a levelling and penetrating agent for acid colors on wool; also recommended for obtaining balanced shades on wool/nylon blends. Its action, in addition, minimizes barré effects on filament nylon, knit and woven materials.

*Registered trademark

Tinegal* R W I

An auxiliary that, it is claimed, enables selected milling colors to be applied in the presence of strong acids with the levelness and penetration qualities of strong acid dyestuffs. Brightness of pastel shades are improved, wool suffers less damage and wash and wet fastness is unimpaired.

*Registered trademark

Tinofix* L W

A non-coppered fixing agent for improving wash and wet fastness of direct and developed colors. It is especially effective when used in conjunction with creaseproof resins. One of the outstanding advantages is the slight effect on shade. This characteristic makes it the preferred product for bright colors which are considerably altered by the coppered fixative types.

*Registered trademark

THE HART PRODUCTS CORP
1440 Broadway
New York 18, N Y

Catylex B

A cationic softener for treatment of Orlon yarn. Exhausts readily and produces desirable soft hand.

Hartocide

An emulsifiable concentrate of Dieldrin for permanent mothproofing of wool fabric, yarn, and carpets. It is applied directly in the dye bath and is said to yield protection durable to many dry cleanings and washings, exceeding the ASTM specifications for permanent mothproofing and meeting the U S Dept of Agriculture specifications. It is stated that it is very economical, since only 0.5% on weight of fiber is required.

Hartoresin NV

A polyvinyl acetate emulsion specially manufactured as a textile finish. It is said to exhibit high shelf and bath stability and to yield heavy body on fabrics. It is recommended by the manufacturer as a bodying agent for cottons, a bodying agent for thermosetting resin finishes, a stiffener for nylon knits, an anticurl agent for cotton and synthetic tubular knits, and a snag resistance finish for hosiery.

Softyne R

A nonionic softener said to exhibit very high resistance to scorching in high temperature treatment of cottons, rayons and synthetics. It is recommended by the manufacturers for use as a softener in resin finishing, including stabilized, schreinered and embossed finishes. It is compatible with all types of resin catalysts.

Supramides

A series of high activity amine condensates for use as detergents, dyeing assistants, degreasing agents, foam stabilizers, and dispersing agents.

* * *

E F HOUGHTON & CO
303 W Lehigh Ave
Philadelphia 33, Pa

Houghto-Wax Flake

A flaked wax for use in sizing of cotton warps.

Rezosol No. 1438

A water-soluble polymer for sizing filament Dacron warps. It is said to replace polyvinyl alcohol as a binder in sizing spun Dacron/cotton warps.

Softex No. 595

An antistatic fiber lubricant for use in garnetting synthetics and wool.

Softex No. 1427

An anionic softener for use with wash-wear resins. It is stated that it has a wide range of compatibility and is effective also as a softener on knitting yarns when applied on the winder.

Softex No. 1446

A liquid cationic softener which is said to be especially effective on Orlon and Ban-Lon. It disperses completely in cold water and requires no predissolving.

Sulfol No. 1449

An antisoiling fiber lubricant for carpet stock.

Sulfol No. 1450

A fiber treatment compound for cotton stock which is self-emulsifiable. It is applied in emulsion form at the picker and is said to reduce fiber breakage and fly and help to produce more uniform and stronger yarn.

Warp Conditioner No. 1429

A cotton warp sizing assistant used with starch. It is said to be completely dispersible in water.

Warp Conditioner No. 1439

An hygroscopic agent and softener for use in cotton warp sizing which is said to improve weaving under low humidity conditions and give improved handle to grey goods.

LAUREL SOAP MANUFACTURING CO, INC

Toga, Thompson and Almond Sts
Philadelphia 34, Pa

Metrosol B

For wool scouring & fulling. A synthetic fulling compound for use on woolen-synthetic blended goods. It is said to produce fabrics with good cover and excellent hand well within normal fulling time. Ether extractibles are well within accepted limits. It is stated that Metrosol B is stable in the presence of very high concentrations of soda ash and is, therefore, adaptable to fulling, both neutralized as well as carbonized but unneutralized goods. It is reported that Metrosol B has been proven by comprehensive full production mill runs.

Solvent K

An improved product designed to remove the toughest hosiery transfers using a wet bath, and to assist in the removal of wax and oil accumulations from winding and other types of machinery. Applied as an oil or emulsion it is said to offer the utmost in convenience and performance.

* * *

MAHER COLOR & CHEMICAL CO

1700 North Elston Ave
Chicago 22, Ill

EsTergent* "200"

This is an alkane sulfon amide ester. It is an anhydrous, amber, viscous liquid, which is claimed to be the first 200%-active detergent developed either here or abroad. One pound of EsTergent "200" is said to be equal in activity to one pound of 60-L triethanolamine alkane sulfonate plus one pound alkanolamine fatty acid ester in scouring ability, due to its unique double interlocking condensation.

*Tradename. Patent #2826596

* * *

JOHNS-MANVILLE PRODUCTS CORP

22 East 40th St
New York 16, N Y

Chromosorb®

Chromosorb is a calcined diatomaceous earth aggregate, which is available as screened to 10/30, 30/60 and 35/80 mesh sizes. Other mesh sizes can be made available upon request. Chromosorb grades are available either with or without acid washing and packaged in 1 lb glass bottles. Typical physical properties are as follows:

Color	Light Pink
Density, Loose weight lbs/cu ft	23
Specific Gravity, True	2.15
Absorption, % by Weight, Water	90
Moisture, % by Weight, Max	1.0

The principal application for Chromosorb is for gas phase chromatography or for chromatographic studies where chemical inertness is required. It is produced from Johns-Manville C-22 fire brick and specially processed to assure a high degree of uniformity.

®Registered trademark

Chromosorb W®

Chromosorb W is a flux calcined diatomaceous earth aggregate specially processed and prepared for chromatographic studies. Its application is for gas phase chromatography and particularly for chromatographic studies of polar compounds. Chromosorb W is currently available in commercial quantities as screened to various mesh sizes, including 30/60 and 60/100 mesh, either with or without acid washing. Typical properties for Chromosorb W are as follows:

Color	White
Free Fall Density, lb/cu ft (avg)	10-11
Specific Gravity, True	2.30
Water Absorption (Navy Oil Test), cc/gr (avg)	4.7-5.2
Moisture, % by Weight, Maximum	1.0
pH (avg)	8-10
Surface Area (BET liquid nitrogen Absorption) sq m/gr (avg)	3-4

®Registered trademark

METRO-ATLANTIC, INC

Centredale 11, R I

Atco Finish #876

A nonionic thermoplastic resin emulsion recommended for use in combination with water repellents where added firmness and body is required. Atco Finish #876 does not backwet; consequently, it is stated, any degree of firmness may be built into a water repellent finish without affecting the spray rating. Compatible with metallic salt wax type water repellents, resin wax systems, and silicone water repellents.

Atco Light Duller XP-3

An anionic dispersion of a high melting thermoplastic resin. It is stated that it delusters nylon, Dacron, acetate, and other synthetic materials without producing the chalky surface effect normally obtained with pigment dullers. Does not change the hand of the finished material.

Atco Process Oil

A blend of nonionic lubricants and antistatic agents for application to nylon, Orlon, and other synthetic yarns. It is said to eliminate static build up and lubricate fibers during spinning and knitting to produce a smoother, more uniform yarn. Readily removed by scouring in warm water. Particularly effective on heat crimped and textured yarns.

Atco 40-S

A 40% active solution of ethylene urea. May be reacted with formaldehyde by a very simple procedure to produce a fiber reactant ethylene urea formaldehyde resin.

Atcosoft PE

A nonionic polyethylene softener emulsion compatible with all of the common thermosetting resins and catalysts, particularly effective in aplication to resin-finished cotton fabrics where a soft hand with improved tearing strength, crease recovery, and abrasion resistance is desired. It is stated that it does not discolor white fabrics and does not interfere with the fastness of shade of dyed fabrics.

Celersel*

An accelerator and dyeing assistant for wool and other animal fibers. It is claimed to cut normal dyeing time in half. Celersel is added to the dyebath at the start of the dyeing cycle. It functions as a swelling agent for the wool fiber. Consequently, the dyestuff is diffused through the fiber at a much faster rate than is normally possible. The swelling effect is said to be permanent; therefore, Celersel processed materials have a much loftier hand than conventionally processed goods. May be used on wool stock, top, yarn, or piece goods.

*Patented

Chlordare* E

A fiber-reactant thermosetting resin particularly effective in processing cotton fabrics for minimum-care effects. It is claimed that properly processed fabrics will withstand repeated home and commercial launderings without discoloring or losing tensile strength due to chlorine retention.

*Trademark, pat pending

Cyclo-Ethylene Urea*

Ethylene urea in pure dry powdered form. 100% active. This product is a colorless, odorless, neutral solid which is readily soluble in water, methanol, ethanol, and similar solvents. Raw material for the manufacture of thermosetting resins, adhesive modifiers, and many other end uses.

*Registered trademark

Emboset* HA

Thermosetting resin which is recommended primarily by the manufacturer for use in rayon fabrics where wash-and-wear effects are required. It is claimed to produce extremely high wet and dry crease recovery with full, mellow hand and minimum effect on tearing strength and abrasion resistance of the finished material. May be blended with softeners, water repellents, and other materials for a wide variety of effects.

*Registered trademark

Emboset* ZP

A purified ethylene urea formaldehyde resin. It is stated that this purified material has less tendency to discolor white fabrics than conventional products of this type. It is further stated that, because of its high purity, a consistently uniform resin can be supplied which will not vary from batch to batch. Consequently, finishes applied with Emboset ZP may be reproduced precisely on repeated runs. High purity also reduces the danger of odor development in the finished fabric.

*Registered trademark

Metaperm PX

A water-phase thermoplastic resin binder for metallic pigments. Non-foaming, nontarnishing binder which, it is said, will produce bright, fast, metallic prints on high-speed roller printing machines. All effects produced are claimed to be durable to repeated laundering and dry cleaning.

Mildare #2102

A highly concentrated mildewproofing agent and bacteriostatic finish for textiles. This product is said to be particularly effective in application to heavyweight cotton fabrics such as awnings, ducks, and canvas. Very low concentrations of Mildare #2102 are required for adequate mildew resistance. It is stated that the product does not discolor fabrics to which it is applied, and the treatment will be effective after prolonged outdoor exposure. Fabrics treated with Mildare #2102 may be topped with a water-repellent finish for a combination mildewproof-water repellent effect.

Vimset

Nonionic scrooping and antistatic agent. Produces wool-like hand on rayon, acetate, and other synthetic materials. Also prevents static build up during processing. May be applied by exhaustion or by padding.

* * *

M MICHEL AND CO, INC

90 Broad St
New York 4, N Y

Cachalot* Olicid 99

A white distilled oleic acid, minimum 99% saponifiable, with rigidly controlled iodine, hydroxyl, and acid values. For use in dyeing assistants, scroop finishes, water-proofing agents, lubricants, wetters.

*Registered trade name

Michelene* 40

An antistatic softener for Orlon-Dacron type synthetics. This readily soluble white paste is useful as a dyeing assistant.

*Registered trade name

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MORETEX CHEMICAL PRODUCTS, INC

314 W Henry St
Spartanburg, S C

Catalyst ZF

A Catalyst for thermosetting resins which is said to prevent precuring or surface curing during drying operations.

Morofin AD

A new type napping softener which is said to give good cover and high bulk in addition to lubrication sufficient to give good napping properties. It is claimed that scroop is excellent without addition of corrosive acids necessary in some other softeners used to obtain scrooping properties. Elimination of extra drying contributes to excellent economy.

Moropol 762

An aqueous nonionic dispersion of an expidized glyceride. This is said to give excellent results as a durable softener for wash and wear, crease-resistant or glaze finishes. It is said to impart excellent tear strength and added crease angle and to have no wet soil pickup in laundering. It also is nitrogen free and has no chlorine retentive properties.

MORNINGSTAR-PAISLEY, INC
630 West 51st St
New York 19, N Y

Felt Finish No. 40

Low viscosity starch-based finishing compound. Used at high solids to add stiffness and weight to felts. Compatible with all commonly used felt finishes. It is said to have good binding and adhesive properties.

Felt Finish T-5845

Starch-based finish for use where increased resistance to water spotting or wetting is desired.

Prepared Finish 9153

Ready-to-use liquid finish based on natural polymers. In conjunction with thermosetting resins it is said to give good durability. Used to impart a full and firm body.

Print Thickener 5959

Modified natural gum, adaptable as a thickener in printing Rapidogen, Indigosol, aniline black, direct, and acid dyestuffs. Compatible with CMC, starch, modified starches, natural gums.

Rayon Oil 6915

Throwing oil, yarn soaking, winding. Readily removable in boil-off.

Softener 6569

A fatty amide condensate dispersion. Used to soften and lubricate all types of fibers.

Vinymul EK-1758

An alkaline-soluble, 55% solids polyvinyl acetate copolymer emulsion; produces solutions said to be of exceptional clarity and high viscosity. Suggested for warp and single end sizing because of its solubility in alkalies.

Vinymul EK-2474

Polyvinyl acetate copolymer with thermosetting characteristics. Cured films become semi-thermoplastic, hard and insoluble in water and all common solvents. Can be plasticized if flexibility is desired.

Vinymul EK-2589

Polyvinyl acetate terpolymer which is said to have excellent gloss and high block point, with high degree of flexibility and toughness.

* * *

THE NARDA ULTRASONICS CORPORATION
Westbury, Long Island, N Y

Blast Detergents and Solvents

Blast 1 is a detergent additive used as a wetting agent in baths for ultrasonic cleaning. It is stated that it is odorless and nonflammable, promotes cavitation, reduces surface tension, outgasses entrained air and protects against redeposition of soil. Blast 2 is a solvent of the inhibited trichlorethylene type. It is said that it displaces water from metal surfaces and produces a surface chemically clean after ultrasonic agitation. Used without dilution to remove oil, grease, waxes, solder flux, fingerprints, discoloration and metal oxides.

* * *

ONYX OIL & CHEMICAL CO
Warren and Morris Sts
Jersey City 2, N J

Anionyx RW

This product is an anionic surface active agent which is said to possess exceptional rewetting properties. It is stated that the high efficiency of this material makes it one of the most economical agents available for all rewetting operations in the textile mill. It is further said to be an excellent all-purpose wetting agent for textile processing. May be also used as a preparatory treatment in Sanforizing, and auxiliary continuous peroxide ranges.

Lurasan

An efficient textile softener and lubricant. Lurasan is an anionic paste that is said to display powerful softening properties at low cost, ease of solubility and excellent resistance to yellowing due to heat. May be used on cottons and synthetics.

Onyx Resin 0-4

A water soluble cellulose reactant resin. It is stated that this resin is used on cellulosic fabrics to impart crease resistance and shrinkage control while maintaining exceptional resistance to chlorine degradation even after launderings at the boil.

Onyxsan FW

A cationic lubricant and softener, which is said to offer unique effectiveness in the field of acid fulling as a lubricant and protective agent for wool. May be also used as an exhaust type softener for long bath application to natural and synthetic fibers.

* * *

ORGANIC CHEMICAL CORP
P O Box 432
Providence 1, R I

Orcoacid #20

This auxiliary is recommended by the manufacturers for use in the oxidation of sulfur colors on cotton in conjunction with Orco Developer IV. It is claimed that Orcoacid #20 replaces the normally-used acetic acid 56% in a ratio of 1:5 and results in a better absorbency for the cotton fabric. Since the goods are left in a softer conditions, no additional aftertreatment with sulfonated castor oil is needed—a treatment which is often required when chrome and acetic is used.

* * *

CHAS PFIZER & CO, INC
630 Flushing Ave
Brooklyn 6, N Y

GS-7 [1-(o-hydroxybenzoyl)-2-(2-nitro-1-phenylethyl)-hydrazine]

An organic compound said to possess broad antimicrobial activity. It is soluble in a number of organic solvents and is relatively nontoxic at suggested use levels. It is suggested as an antifungal and antibacterial agent for textiles. GS-7 is presently available in development quantities.

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PIONEER CHEMICAL WORKS, INC
940 N Delaware Ave
Philadelphia 23, Pa

Defoamer H-681-M

An amber oily liquid with a tendency to form a gel at low temperatures, this nonionic product is said to eliminate foam in adhesives, resin emulsions, rubber latices, sizes, and finishes, and similar foaming mixes, at a very low concentration (average, 0.2%) and a wide pH range.

Metapon T-255

A sodium salt of a complex fatty acid amide, this product is said to be an all porpose (wetting, scouring, bleaching, etc) textile assistant, noncorrosive to iron, highly stable in acid or alkaline media, and in hard water.

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POLYMER INDUSTRIES INC TEXTILE DIVISION
Springdale, Conn

Emulsion Base #1450

Designed as a base for preparing oil-in-water emulsions for printing vat dyes using the conventional (hydro-reduction) system. Reportedly produces prints with excellent smoothness, color value, sharpness, softness and rinses out easily in high-speed continuous washers.

Emulsion Base #1735

Designed as a base for preparing oil-in-water emulsions for printing stabilized azoic and soluble vat-type dyes. Reportedly produces prints with excellent smoothness, color value, sharpness, softness, and rinses out easily in high speed continuous washers.

Emulsion Base #1740

Designed as a base for preparing oil-in-water emulsions for printing direct, acid, basic, acetate colors. Also said to be excellent for discharge work. Reportedly produces prints with excellent smoothness, color value, sharpness, softness, and rinses out easily in high-speed continuous washers.

Emulsion Base #1745

Designed as a base for preparing oil-in-water emulsions for printing vat dyes by the flashage method. Reportedly produces prints with excellent smoothness, color value, sharpness, softness, and rinses out easily in high-speed continuous washers.

Low Crock Binder 1718

An acrylic copolymer resin said to have excellent binding power for pigments to cotton, glass and synthetic fabrics and excellent stability to light/wash cycle exposure. Recommended by the manufacturer for all aqueous and oil-in-water printing systems.

Pigment Binder Concentrate 1717

An extender base which can be used as an all-aqueous extender or as an oil-in-water emulsion base for machine or screen printing of pigments. Reportedly, offers excellent economy, machinability, and fastness properties.

Polyfilm SD

An acrylic resin copolymer, supplied in emulsion form, especially designed for warp sizing of Dacron filament yarn and to be used in combination with starch sizing materials for sizing spun blends of Dacron and other natural and synthetic fibers. Specific adhesion to synthetic fibers is said to be excellent, and the resin is easily removed in the finishing operation.

Polygum 260

Cold-water swelling, dry, gum ether with high viscosity characteristics. Said to be excellent for thickening all types of dyestuffs for screen or machine printing. Reported to be easily removed in the finishing operation, and to have excellent solvent emulsifying properties, making it ideal as a gum base and colloid for oil-in-water emulsions.

Polylube EE

Nonionic polyethylene emulsion; extremely white film, reportedly imparts top silky feel with good body and springiness to fabrics. Said to be compatible with a wide range of finishing materials, such as starch, gums, and synthetic resins. It reportedly imparts good sewing qualities and reduces abrasion tendencies of thermosetting resins.

Polylube NI

Nonionic softener for use with resins and/or starches for warp sizing of spun synthetics, cotton and worsted yarns. Readily dispersible at room temperatures and said to be ideal for continuous cooking systems. Plasticizing action and surface lubricity characteristics are claimed to be excellent.

Polysoftener NI

Powerful nonionic softener, which is said to be readily soluble at room temperatures, and to have excellent compatibility with a wide variety of resins and finishing materials. Reported to be highly resistant to high-temperature curing, producing fabrics with a top silky feel, good body and drapability.

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THE PROCTER & GAMBLE DISTRIBUTING CO
P O Box 599
Cincinnati 1, Ohio

Improved Kyro AC

New formula Kyro AC is said to give superior fulling characteristics, with firm bottom felt and good cover. It promises reduced "stretch out" in the washer coupled with very free rinsing properties. Can be used with normal amounts of soda ash, neutral or for true acid fulling. It is said to be excellent for wool-Dacron and other blends.

Proxoft-N*

A brand new type of nonionic softener and lubricant developed especially for resin finishing or use with troublesome weighters. Proxoft-N has maximum compatibility with acids, salts, and other finishing materials. It is said to soften and lubricate for better sewing and abrasion resistance. It is stated that Proxoft-N imparts a smooth, full-bodied softness with excellent scorch resistance and no chlorine retention. It will not promote wicking on water staining and has no effect on the fading rate of dyestuffs.

*Registered trademark

PUTNAM CHEMICAL CORP
Beacon, N Y

Antistatin PS*

An antistatic agent for synthetic fibers, particularly for nylon and other polyamides. It represents a sodium salt of a polymerization product and is anionactive. It does not impart any adhesiveness to the goods and, therefore, should be used with other auxiliary finishing agents.

*Registered trademark

Antistatin SM*

An antistatic agent for synthetic fibers representing a sodium salt of a polymerization product and is anion active. It should be combined for the application on textiles with other finishing agents which impart adhesiveness to the material. In view of its anionic characteristics, it is best to combine with other anionic and nonaionic finishing agents and it is said to impart a stiffening effect on fibers.

*Registered trademark

Antistatin TT

An antistatic agent for synthetic fibers representing a fatty acid derivative which is anion active. Antistatin TT is a viscous, yellow paste, readily soluble in water. It possesses adhesive properties and can, therefore, be applied by itself without additions of other finishing agents to impart or promote adhesion, particularly important for smooth fabrics.

Basanyl L

This is a homogeneous heterocyclic nitrogen compound, slightly basic. It is miscible in all proportions with water, alcohol, acetone, benzene, toluene and xylene. Basanyl L is claimed to be an excellent solvent for dyestuffs, color bases and naphthols.

BASF Inhibitor TX 6008

This is claimed to be a very effective gas inhibitor for dispersed dyestuffs on acetate and triacetate. It comes in the form of an emulsion.

Basogal KS

A cation active polyamine compound. It is a non-foaming levelling and stripping auxiliary product in vat dyeing. Basogal KS is a brown liquid of low viscosity and of neutral reaction, easily soluble in either cold or hot water. It is foam-free and not surface active and has, therefore, no wetting or cleansing effect. Basogal KS has affinity for the dyestuffs and acts as a retarding agent.

Basogal P

A new leveling agent for dyeing with vat colors. It represents a brown, slightly viscous solution, easily soluble in cold or warm water. The solutions are slightly alkaline. The product is not surface active and also it is not recommended for use as a wetting out agent, or wash assistant. It is said to be, however, excellently suitable, due to its solvent action, in vat dyeing. The product is non-foaming.

Basophen B Highly Conc

Recommended as an addition for mercerizing liquors. Is a non-foaming wetting-out agent, free from cresol. The product is an anion active, alkali stable, alkyl sulfate. In mercerizing liquors it brings about a rapid and complete penetration of yarns and piece goods.

Basophen LG

This product represents a mixture of sodium salts of aliphatic sulfonic acids. It is a cresol-free, nonfoam wetting agent for caustic baths. Basophen LG is an almost clear yellowish slightly viscous liquor of neutral reaction. It is suitable for additions to caustic soda solutions up to 30°Bé concentrations. It is recommended as an addition to caustic soda solutions of lower concentrations than standard mercerizing liquors. It is said to improve levelling and penetration and increase dyestuff affinity.

Basophor A Oil Soluble

This product is a fluid, brown oil of neutral reaction, stable against hard water. It is easily soluble in most technical fatty and mineral oils and is emulsifiable in water. Recommended by the manufacturers as an emulsifier for mineral and fatty oils.

Basophor EL

A versatile emulsifier representing an oxyethylation product of a vegetable oil. It is a yellowish oil readily soluble in water. It is also soluble in a number of organic solvents. The solutions show a neutral reaction. Basophor EL is primarily recommended by the manufacturers for the preparation of emulsions of liquid fatty acids and mixtures of these with mineral and fatty oils. Excellent emulsifications are said to be obtained with castor oil, waxes, organic solvents and solutions of synthetic resins.

Basophor O

A water-soluble nonionic fatty alcohol derivative. It represents a light brown soft paste readily soluble to a clear solution in warm water. Basophor O is recommended by the manufacturers as an emulsifying agent for fatty acids and waxes.

Basopon O Conc Powder

A highly efficient fatty alcohol sulfonate and universal detergent for the textile industry. The Basopon O Conc. Powder is readily soluble in hot water yielding a clear solution and by itself is a yellowish white powder.

Basopon WR

A cleansing agent for all kinds of textile fibers representing a combination of detergents containing solvents. Basopon WR is a viscous, jelly-like system with an aromatic odor and of slightly alkaline reaction. It is soluble in water.

Basosoft AF 100%

A nonionic fatty acid condensation product. Represents a brownish soft paste readily soluble in boiling water. Recommended by the manufacturers as a softening agent for textiles, yarns or piece goods.

Basosoft AH

A cation-active, fatty acid condensation product. Basosoft AH is a slightly yellowish soft paste, easily soluble in warm water. It is a substantive softening agent for cottons and other cellulosic fibers.

Basosoft HT

A fatty acid condensation product recommended as a softening agent for textiles. It is not susceptible to temperatures and is recommended by the manufacturers when processing textiles at higher temperatures. In its physical appearance, it is a light yellowish homogeneous paste easily soluble in warm water.

Basowet AEM Powder

A brownish yellow, hydroscopic powder easily soluble in water and recommended by the manufacturers as a water-soluble universal emulsifier. The solutions show a practically neutral reaction. The product is stable in hard water, acids, alkalis and a number of metallic salts. It can be used for a variety of purposes such as the emulsifying of mineral oils, paraffin, as well as liquid and solid fats and fatty acids.

Basowet BX Dry

A sodium salt of an alkyl naphthalene sulfonic acid. Basowet BX Dry is a universal wetting agent for the textile industry and is recommended by the manufacturers in various plant operations such as boil-off, bleaching, sizing and desizing. Various concentrations of this product are available.

Discharging Agent H

A water-insoluble reducing agent. It is recommended for use in conjunction with the water phase Lumatex pigment system. With such an addition colored discharges can be obtained on dischargeable grounds.

Etingal A

An ester of phosphoric acid. This product is claimed to be a highly efficient antifoaming agent in textile processing. Etingal A is a slightly viscous liquid, insoluble in water.

Fixapret BU*

A bifunctional methylol compound for shrink- and crease-resistant finishes and also well suitable for glazed and embossed effects.

*Registered trademark

Fixapret BU is a light yellowish, somewhat turbid liquid miscible with water, of neutral reaction.

Flame Retardant BASF

This product is recommended by the manufacturers for fireproofing textiles and represents a white, crystalline, slightly hydroscopic powder, readily soluble in water. At high temperatures Flame Retardant BASF develops gases which prevent treated material from coming into contact with air.

Germocid*

A surface-active, quaternary ammonium compound used as a preservative and disinfectant. It has wetting and rewetting properties. Germocid is easily soluble in water, producing clear solutions. It represents a reddish brown, slightly viscous liquid.

*Registered trademark

Kaurit G*

A derivative from dialdehyde and recommended by the manufacturers for crease-resistant finishes on fabrics of regenerated cellulose. Kaurit G is a pale yellowish liquid soluble in water. Solutions show a pH of 4-5 and have an unlimited storage stability.

*Registered trademark

Kaurit 140 Solid*

A polymethylol compound of a urea condensation product, recommended for shrinkproofing and non-swelling finishes for textiles. It is also said to be well suited for fixing water-soluble finishing agents. Kaurit 140 Solid represents a clear aqueous solution readily miscible with water in all proportion. It has a neutral reaction, is odorless and stable in storage. Condensation takes place only at elevated temperatures and in presence of catalysts.

*Registered trademark

Kaurit W Paste*

A modified urea-formaldehyde condensation product recommended for textile finishing, for crease-resistance and for improving the hand. The product is a white paste soluble in water of neutral reaction. It can be applied in conjunction with the usual finishing agents.

*Registered trademark

Kieralon B*

A versatile finishing agent for the textile industry. It represents a synergetic mix of selected nonionic and anionic surface active agents. Kieralon B is a light brown viscous liquid of neutral reaction, easily soluble in either warm or cold water. It is particularly recommended by the manufacturers in boiloff of cotton and other cellulosic fibers and the general preparation of textiles for dyeing and printing.

*Registered trademark

Nekanil AC Special*

Represents a clear, light brown, somewhat viscous liquid of slightly alkaline reaction. Recommended by the manufacturers as a precleansing agent and dyeing auxiliary. Well-suitable for dyestuff groups used for synthetic fibers, aiding in the dispersion of dyestuffs and in the leveling of dyeings.

*Registered trademark

Nekanil S*

A sodium salt of substituted naphthalene sulfonic acid. Recommended as a penetrating and leveling agent, which has an affinity for fibers. Best suitable for wool and wool felt and hats. Nekanil S is a light yellow brown powder easily soluble in water.

*Registered trademark

Palatinit M

Represents a cyclic carboxylic acid ester and is recommended by the manufacturer as a carrier for the dyeing of polyester fibers with dispersed dyestuffs. Palatinit M is an anhydrous, almost colorless and odorless, liquid of low viscosity. It is not soluble in water but emulsions are easily prepared by the use of suitable emulsifying agents. It accelerates the uptake of dyestuffs and permits the dyeing of

medium to deep shades at temperatures below the boil within a reasonable dyeing cycle. Palatinit M has also a beneficial influence on the levelness and fastness properties of the dyeing and prevents the staining of other fibers present in the blend.

Perapret AX45*

A plastic dispersion recommended by the manufacturers as a finishing agent for a number of brushing and padding processes. Also for use as a binder for printing bronze powders.

*Registered trademark

Perapret PN*

Is a plastic dispersion derived from acrylic acid. Is supplied in the form of a fluid plastic dispersion which can be diluted with either cold or warm water in all proportions. Recommended as a finishing agent for polyamide fibers, particularly suitable for nylon hose imparting a good form retention.

Persistol Extra

A paraffin wax emulsion free from emulsifier and containing zirconium. Recommended as a water repellent agent for finishing textiles. Persistol Extra is a white, fluid homogeneous emulsion with an acid reaction. It is claimed that excellent water repellency can be obtained on all types of textiles.

Perstabilizer BASF

Salt of a polycarboxylic acid. It is said to be an effective stabilizer for alkaline peroxide bleach bath. Has the property to stabilize the active oxygen in the alkaline bleach bath thus preventing a too rapid liberation of oxygen, particularly at elevated temperature.

Research Product 4018

Is recommended by the manufacturers for use for printing acrylic fibers with Basacryl dyestuffs to promote fixation and eliminate a pressure steaming operation in favor of continuous ageing.

Sesolvan NK*

Represents an organic solvent used in conjunction with continuous padding operations on polyamide fibers.

*Registered trademark

Sizing Agent T8 New

Represents a copolymer in ethanol-water recommended for sizing acetate, polyamide and PVC fibers. Can be employed for continuous dyeing of nylon.

Textile Wax W

A water-soluble high molecular ether recommended for sizing and finishing liquors. Textile Wax W is a pale yellowish hard wax supplied in flake form. It dissolves in water yielding clear solutions with a neutral reaction.

Ultraphor WT High Conc*

Sodium salt of an organic sulfonic acid. Recommended as an optical whitening agent for cellulosive fibers as well as for paper.

*Registered trademark

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QUAKER CHEMICAL PRODUCTS CORP
Conshohocken, Pa

Diaperm Q

A liquid polyethylene emulsion with good bath stability. It is recommended by the manufacturers for use in resin finishing baths.

Diasett LCD

A cyclic urea formaldehyde resin for crease-resistant finishing of woven cellulosic fabrics. This resin is also used as a dimensional control agent for cotton knit goods. It is said to be very resistant to chlorine damage.

Reactant 16

This product is a modified glycol acetal which is said to provide dimensional control and a durable built hand to cellulosic fabrics and blends with synthetics. It is stated that finished fabric need not be afterwashed and with proper curing the fabric will be completely nonchlorine retentive.

Reactant 53

A modified glycol acetal which will provide wash and wear finishes said to possess maximum resistance to chlorine damage. It is stated that this acetal is resistant to alkaline hydrolysis and its effects are durable. Reactant 53 is recommended by the manufacturers for white sheetings.

Velvetol HD

A white nonionic softener said to possess good stability and excellent softness for broadcloths and sheetings. It is liquid and dispersible in cold water.

Velvetol LS

An efficient cationic softener for wool and synthetics, especially Orlon. This product is supplied as a liquid dispersible in warm water.

* * *

REFINED PRODUCTS CORP
624 Schuyler Ave
Lyndhurst, N J

Drilene 306

A self-emulsifiable viscous liquid which was developed as a water repellent for use on hydrophobic fibers, filament yarns and yarn-dyed fabrics.

Kloroperm

A cyclic resin reactant which is said to give durable wash and wear properties to cotton and rayon fabrics. It is said to impart excellent wrinkle recovery and outstanding resistance to chlorine bleaching.

Perma Fix-100

A substantive resinous powder developed to fix direct colors on cotton and rayon. It is said to reduce the bleeding and crocking, and increase the fastness to washing and perspiration.

Perma Kleer 312

Hydroxycarboxyllic acid chelating agent for iron, copper, and calcium. Iron is sequestered from pH 2 to high concentration of caustic. Calcium is sequestered under caustic conditions. It is compatible with amino chelating agents. Because it is not affected by oxidizing agents, it is said to be an excellent sequestrant for copper and iron in hydrogen peroxide, sodium hypochlorite, and sodium chlorite bleaching baths. It is also useful as an iron sequestrant in scouring operations, mercerizing baths, and dyeing and finishing.

Perma Kleer 354

This hydroxycarboxylic acid is said to be an excellent sequestrant for iron, copper in alkaline solutions. It is useful in scouring and mercerizing baths.

Perma Kleer 80 Acid

(Hydroxyethyl ethylene diamine triacetic acid). Soluble sequestrant for heavy metals under acid conditions. As the alkali, ammonium, or amine salt, it is a general purpose sequestrant in the alkaline range.

Perma Kleer 140 Acid

(Diethylene triamine penta acetic acid). Forms stable complexes with calcium, magnesium, and heavy metals. Ammonium and amine salts are easily formed where sodium ion is not desired.

Perma Set 440

A cyclic urea formaldehyde resin developed for application of wrinkle-resistant and shrinkage-controlled finishes on textile fabrics. It is also used in producing embossed, glazed, shreinered and calendered finishes.

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REICHHOLD CHEMICALS, INC
EASTERN RESIN DIV
726 Rockefeller St
Elizabeth 2, N J

9400 Acripol*

A latex of a soft acrylic copolymer. This resin is used as a binder in pigment dyeing and printing because of its good crock and abrasion resistance. It is said to be an excellent binder for non-woven fabrics because of its great adhesion to fibers.

*Registered trademark

9425 Acripol*

A latex of a hard acrylic copolymer. It can be used in fabric finishing to impart stiffness and hand. It can be plasticized with a softer acrylic polymer to give fabrics of intermediate stiffness.

*Registered trademark

9430 Acripol*

A latex of a hard, alkali-soluble, acrylic copolymer. This low viscosity emulsion is supplied at pH 2 to 4; it becomes very viscous as the pH is raised and the polymer dissolves. It may be used as a sizing compound or as a thickener.

*Registered trademark

Fabrez 302*

A low molecular weight urea formaldehyde resin. This resin is used to impart a wrinkle resistant finish to cotton and rayon fabrics.

*Registered trademark

Fabrez 358*

A cyclic urea-formaldehyde resin used to impart wrinkle resistance and dimensional stability to cellulosic fabrics. It is said to exhibit very low chlorine retention.

*Registered trademark

Fabrez 613 M*

A low-molecular weight urea-formaldehyde "cream" resin. This resin is said to impart wrinkle resistance and reduce the shrinkage of rayon and mixed rayon fabrics. It has been especially designed to be compatible with most of the commonly used water repellants.

*Registered trademark

9350 LV Plyamul*

A nonionic polyvinyl acetate emulsion used in fabric finishing. This polymer is said to impart a crisp, firm, full hand to fabrics. It also may be used as a binder in non-woven fabrics and textile coatings.

*Registered trademark

9370 Plyamul*

An anionic polyvinyl acetate emulsion of fine particle size. It is compatible with starches. It is claimed that it is useful as a binder in non-woven fabrics because of its excellent adhesion and water resistance.

*Registered trademark

1505 Synthemul*

A solvent-free alkyd emulsion used as a binder in oil-in-water pigment printing and dyeing systems. It may be baked or air dried, when necessary, in the presence of driers. It can be modified with nitrogenous resins, such as butylated-melamines and others, to give the desired finish.

1506 Synthemul*

A solvent-free alkyd emulsion used in pigment printing and dyeing. This fast drying resin is compatible with butylated-melamines and other nitrogenous resins. It may be air dried or baked by itself or in combination with urea or melamine resins. When necessary, driers may be added for faster cure. It is stated that cotton finishes prepared from 1506 Synthemul permit exposure of the fabric to temperatures up to 500°F for long periods without any substantial damage to the goods.

1530 Synthemul*

A phthalic-free alkyd resin used in pigment printing and dyeing of textiles. This easily emulsifiable resin is said to enhance the crocking and abrasion resistance of pigment-printed and pigment-dyed fabrics.

1535 Synthemul*

An easily emulsified, phenolic modified, alkyd used as a binder in pigment printing and dyeing. It has wide compatibility with other resins and is said to contribute excellent crock and abrasion resistance.

*Registered trademark

RICHMOND OIL, SOAP & CHEMICAL CO, INC

1041 Frankford Avenue
Philadelphia 25, Pa

Anti-Grafite Coning Lubricant #1547

A coning lubricant, which when applied to nylon, Orlon, Dacron Textralized and other textured yarn, is said to provide an antigrafite and antisoil finish. This oil aids in the removal of grafite from synthetic laces after processing. It is stated that it is completely synthetic, containing no mineral, vegetable or fatty oils, making it extremely easy to scour. The oil is said to have excellent antistatic properties.

Anti-State #214

An effective and versatile antistatic agent for all types of textile fibers. Will tolerate a relatively high concentration of acids, alkalis or salts.

Dyetex 246

A special type of anionic compound to be used in the dyeing of nylon and rayon goods, particularly Banlon and textured yarn fabrics. For use in the dyebath as a dyeing and levelling agent.

Resfin #1849

A new thermoplastic emulsion particularly designed for finishing nylon hosiery. It is stated that it gives a good firm hand and at the same time imparts snag resistance, body and delustering action.

Ring Oil 1873

An excellent oil that can be used on either nylon or steel rings for the twisting of synthetic fibers. Viscosity is 205 SUS at 100 degrees F.

Roscour #1901

A built synthetic compound designed as an effective scouring agent for nylon and other synthetics. It is said to give extremely efficient results when scouring full-fashioned hosiery, half-hose piece goods and textured yarn sweaters, that are constructed of nylon or other synthetics.

Scourpen 104

A nonionic surface agent designed for the washing of wool and wool blended sweaters. It is reported that it will remove readily oils and greases and leave a soft, lofty hand. It is unusually stable in hard water. Is compatible with either anionic or nonionic surface active agents. It will tend to brighten wool colors.

Scourpen 504

A nonionic surface-active agent said to possess excellent levelling and dye dispersing qualities. It can be used as both a scouring and wetting agent. It is claimed to be extremely effective in the scouring and dyeing of Orlon fabrics.

Scoursoft #1900

A new concept in the processing of knitted outerwear fabrics in which the job of washing and softening can be accomplished in one operation. It is stated that it will effectively wash wool and wool blend sweaters, removing the oils and greases, and leaving a soft, lofty hand.

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SCHER BROTHERS

Industrial West corner Styertowne Rd
Clifton, N J

Duraset

A water-white liquid resin applied from the rinse water after dyeing to prevent bleeding and migration of direct dyes. It is said to improve color fastness to washing.

Nylofin

A liquid finish and softener in a single compound designed for application on textured nylon knit goods and yarns. Consisting of synthetic organic polymers it is said to impart durable water absorption, soil and snag resistance, antistatic action, increased bulkiness and a rich full hand.

Nylosol

A liquid finish and softener for use on textured nylon knit goods and yarns. Consisting of organic polymers which become effective on drying, Nylosol is said to impart soil and snag resistance, antistatic action, increased bulk and a soft full hand.

Orlofin

An entirely new kind of substantive Orlon finishing agent which is said to impart both moisture absorbency to hydrophobic fibers and a luxurious soft hand. It is said to permit air and moisture breathing of synthetic fibers and reduce usual body heat and perspiration build up. Orlofin is a hydrophilic salt of a complex acylated amine, cationic, and readily dispersed in water.

Scherco Compound #900

A liquid resin dispersion said to give effective pill resistance to Orlon without curing.

Schercopon 769

An all purpose blend of synthetic soaps for general scouring and cleaning of natural and synthetic fibers. Sudsing level is self-controlled to prevent excessive foaming.

Schercoscour M P

A highly effective low titer powdered scour for synthetics said to possess excellent rinsability at low temperature.

Scherco Softener 366

An Orlon and Acrilan finish which is said to provide a highly desirable and widely accepted softness of hand, great bulk and loftiness, excellent snapback and resilience, and improved lubricity for removing nylon pull threads. Scherco Softener 366 is a quaternary salt of an acylated complex amine which is readily dispersed in water.

Tergitex W

A condensed long chain alkyl amine for wool washing and softening in a single, highly effective operation. It is said to reduce oil content of wool to below one per-cent.

Varsotex

A solvent scour for grease and graphite removal consisting of a blend of self emulsifiable solvents.

Xylotex

A solvent type of detergent which is self-emulsifiable in water and is said to make possible complete tar removal from synthetic or natural fibers in a water system.

* * *

SHAWINIGAN RESINS CORP

Springfield 1, Mass

Resin D-185

A polyvinyl acetate homopolymer emulsion having a very fine particle size (0.2-0.3 micron). It is stated that Resin D-185 has very good mechanical stability, good freeze-thaw resistance and is highly stable on dilution. Tolerance to most plasticizers, borax, inorganic salts and most organic solvents (except ethyl alcohol) is said to be excellent. Films cast from this emulsion are flexible at room temperature without plasticization, have outstanding gloss and clarity and are said to possess very good resistance to water, grease and oils. Resin D-185 is particularly suited to the finishing of goods such as cotton, to get hand and body without resorting to high temperature cure. It is reported that wash resistance and dry cleaning resistance of these finishes is very good. Also makes possible the application from an aqueous system of clear, glossy, flexible coatings for fabrics to be used in such applications as upholstery and automobile seat covers. A binder for non-woven fabrics represents a further use for this versatile emulsion.

Resin D-208

A highly carboxylated, high viscosity polyvinyl acetate resin soluble in many organic solvents as well as in dilute aqueous alkalis. Films cast from organic solvent or aqueous ammoniacal solutions are said to possess a high degree of water resistance. If a fixed alkali such as sodium carbonate is used to dissolve Resin D-208, the films will be permanently re-dispersible in water. It is stated that Resin D-208 may be used as a temporary or a permanent warp size having greater film toughness than offered by conventional alkali-soluble polyvinyl acetate copolymers.

SOLUOL CHEMICAL CO, INC

Green Hill and Market Sts
Natick, R I

Aquagard* Silicone Water Repellents

Stable nonionic silicone water repellents supplied with a catalyst (Curade) necessary for curing.

AQUAGARD*-C—silicone water repellent designed for use on cotton as a pure finish where maximum durability to washing and dry-cleaning are desired.

AQUAGARD*-LC—silicone water repellent for use on synthetic fibers, natural fibers, and fiber blends, offering a wide range of curing temperatures.

AQUAGARD*-W—low temperature curing silicone water repellent for application on woolen and worsted fabrics from either an exhaustive system or by conventional padding methods.

*Registered trademark

Solupon-T

Nonionic softening agent of good durability which is said to impart a full velvety hand to cottons and synthetics. It is stated that it is non-yellowing and nonchlorine retentive. Recommended by the manufacturers for use as a pure finish or in conjunction with resins where excellent crease angle of recovery, tensile strength, tear strength, abrasion resistance and needle lubrication are desired.

Solusoft*

Durable, silicone-bearing, nonionic softener for use in resin-finishing, or where a high-temperature resistant finish is desired. Solusoft is said to be self-curing and to require no catalyst. It is stated that it imparts a soft hand to the fabric giving excellent needle lubrication, as well as resistance to removal by laundering. It is claimed to be highly effective in wash-and-wear finishes on cottons, yielding desirable tear-strength and crease-angle recovery values, as well as softness and hand. Solusoft is non-yellowing, and has no chlorine retention characteristics.

*Registered trademark

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L SONNEBORN SONS, INC

300 Fourth Ave
New York 10, N Y

Lubrisol AS

Nonionic soluble oil base capable of emulsifying up to 95% mineral oil. Lubrisol AS serves as an antistatic additive to wool and worsted oils requiring as little as 0.1% to 0.2% o.w.f. for effective static control. May be sprayed from aqueous system on synthetic staple as antistatic spinning aid.

Textiline* 3000, 3233, 3199

Nonionic antistatic coning oils in low viscosity range for textured yarns (3000, 3233) and for sized or unsized nylon hosiery yarn (3199), light in color, and said to be highly resistant to heat and oxidation. It is stated that they assure perfect cone formation, impart uniform and low tension in coning and knitting, and boil off readily.

*Registered trademark

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STEIN HALL & CO, INC

285 Madison Ave
New York 17, N Y

Emulsifier SH—Viscobond

Integral components of an emulsion system for printing fiber-reactive dyestuffs. Emulsifier SH—a protein based emulsifying agent; Viscobond—a hydrocolloid viscosity regulator. Used together with fiber-reactive dyestuffs, they we said to enhance and improve the brilliance and bloom of print shades and sharpness of details. Print paste stability is improved and speed of machine printing production can be increased.

Texrez Extender G

A modified starch fractionation product which is cold water dispersible and readily undergoes crosslinking reactions with thermosetting resins. Texrez Extender G is claimed to be essential to improve finish and build hand on crease-resistant fabrics and when reacted with thermosetting resins outlasts repeated washings.

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TENNESSEE CORP

1330 West Peachtree-Suite 500
Atlanta 9, Ga

Tenn-Acids* 820, 873, 864, and 855

A series of modified, alkyl aryl, base detergent acids used for the preparation of low cloud point, liquid detergents. Inorganic and organic salts of the Tenn-Acids are said to function as excellent wetting, penetrating, and emulsifying agents with outstanding detergency power. Applicable in kier boiling, open-width boil-off, continuous peroxide ranges, dyeing assistant, scouring after dyeing, and in many other wet textile processing operations in the preparation and dyeing of cotton and synthetic fabrics.

*Registered trademark

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TITAN CHEMICAL PRODUCTS, INC

Mill Road and Wayne St
Jersey City 6, N J

Titamoth

An emulsifiable insecticide applied during the dyeing operation. It is stated that wool treated at recommended dosages has no odor and that the handle, appearance, and physical and chemical properties of the wool are unchanged. The active ingredient is an effective mothproofing chemical which is suitable for protecting goods such as wool fabrics, blankets and outerwear from attack by clothes moth larvae and carpet beetles. It is stated that it provides a permanent type protection. It is further stated that Titamoth in treated goods is not significantly affected by laundering, drycleaning, wet cleaning, hot pressing, perspiration, abrasion, sea water or light. It is claimed that Titamoth-treated woolens meet all requirements of standard ASTM tests for permanent mothproofing.

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UNION CARBIDE CHEMICALS COMPANY DIV OF UNION CARBIDE CORP

30 East 42nd St
New York 17, N Y

Butylene Oxide N (mixed isomers)

C_4H_8O. A high purity mixture of epoxides of 1-butane containing 1,2-isomers and 2,3-isomers of butylene oxide in approximately 85 to 15 ratio. M W, 72.11; Sp Gr 0.8298 at 20/20°C; B P, 62.5°C (760 mm Hg); —2°C (50 mm); —30°C (10 mm); V P, 150 mm at 20°C; Fr P, sets to glass below —150°C; sol in water, 8.9% by wt at 20°C; sol of water in, 3.04% by wt at 20°C; miscible in all proportions at 25°C with acetone, benzene, ethyl ether, heptane, carbon tetrachloride, methanol; visc, 0.41 cps at 20°C; R I (n_D), 1.3832 at 20°C; Surface Tension, 24.6 dynes/cm at 20°C; Heat of Combustion, 15,359 Btu/lb at 25°C. Chemical properties: undergoes usual reactions of epoxides including those with water, alcohols, polyols, thiols, ammonia, amines, and acids. Being a mixture itself, butylene oxide gives rise to reaction products which also are isomeric mixtures. Can be polymerized and copolymerized with other alkylene oxides to yield polyethers. Homopolymers are less water soluble and possess less water tolerance than ethylene oxide or propylene oxide polymers of equivalent chain length. In copolymers with ethylene oxide, a desired balance of water solubility can be obtained with a lower proportion of butylene oxide than with propylene oxide. Suggested uses: chemical intermediate for synthesis of polyurethane resins, detergents, wetting agents, lubricants, oil additives, textile chemicals. Availability: commercial quantities.

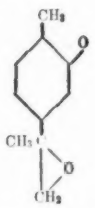
Dicyclopentadiene Dioxide (endo Isomer)

$C_{10}H_{12}O$. A white crystalline powder, M W, 164.21; Density, 1.331 g/ml at 25°C; M P, 184°C; Solubilities at 25°C, in water, 1.4% by wt; in acetone, 44.7% by wt; in benzene, 48.4% by wt; in ethyl ether, 18.7% by wt; in heptane, 1.7% by wt; in methanol, 18.6% by wt; in carbon tetrachloride, 23.1% by wt. Chemical properties: Epoxy groups are most reactive under acidic conditions. Can be hydrolyzed under acidic conditions to a tetrol. Forms dihalohydrins with HCl and HBr or hydroxy esters with organic acids. In the presence of both HBr and organic acids, bromohydrin forms preferentially on the five-membered ring and hydroxy ester on the six-member ring. Suggested uses: Chemical intermediate for resins, plasticizers, and protective coatings. Epoxy resins with heat distortion temperatures in the 300°C range can be made from dicyclopentadiene dioxide, anhydride hardeners, and polyol initiators. These high heat distortion point resins are suggested for evaluation in grinding wheels, brake linings, and dry lay-up laminates. Availability: Development quantities.

2,2-Dimethyl-1,3-Butanediol

$CH_3CH(OH)C(CH_3)_2CH_2OH$. M W 118.17; Sp G; 0.9700 at 20/20°C; B P, 202°C (760 mm Hg), and 135°C (50 mm), and 103°C (10 mm); V P, 0.02 mm at 20°C; Fr P, +12.8°C; sol in water, 0.02% by wt at 20°C; sol of water in, 12.8% by wt at 20°C; Visc, 506 cps at 20°C; R I (n_D), 1.4472 at 20°C. Suggested uses: intermediate for heat stable, ester-type lubricants; intermediate

Dipentene Dioxide (Limonene dioxide)



$C_{10}H_{12}O_2$. Colorless liquid. M W, 168.23; Sp G, 1.0326 at 20/20°C; B P, 242°C (760 mm), and 148°C (50 mm), and 110°C (10 mm); V P, 0.02 mm at 20°C; FrP, sets to glass below —100°C, Visc, 8.4 cps at 20°C; R I (n_D), 1.4682 at 20°C; Solubility in water, 3.24% by wt at 20°C; Solubility of water in, 3.17% by wt at 20°C. Chemical properties: Both epoxy groups are highly acid reactive, the ring epoxide has the greater acid reactivity. Can be hydrolyzed under acidic conditions to the tetrol, erythrite. Forms dihalohydrins with HCl and HBr or hydroxy esters with organic acids. Suggested uses: For crosslinking polymers containing active hydrogens such as acrylic acid. As a scavenger for trace quantities of free acids and Cl in polymer solutions and oils. For evaluation as an epoxy resin reactive diluent and extender. Chemical intermediate for plasticizers, cyclic glycols, alkanolamines, pharmaceuticals, and odorants. Availability: Experimental quantities.

Ethyl-3-Formyl-2,5-Endomethylene Cyclohexane Carboxylate

$C_{11}H_{16}O_3$. M W, 196.25; Sp G, 1.0927 at 20/20°C; B P, 269°C (760 mm Hg), and 176°C (50 mm Hg), and 136°C, (10 mm); V P, (0.01 mm), at 20°C, Fr P, sets to glass below —70°C; sol in water, 0.21% by wt at 20°C; sol of water in, 1.1% by wt at 20°C; Visc, 10.8 cps at 20°C; R I (n_D), 1.4770 at 20°C. Suggested uses: intermediate for resins. Availability: research quantities.

***iso*-Decanoic Acid**

A mixture of branched chain C-10 acids. $C_{10}H_{20}O_2$. M W, 172.27; B P, 254.0°C (760 mm Hg), and 173°C (50 mm), and 137°C (10 mm); Sp G, 0.9019 at 20/20°C; V P, <0.01 mm at 20°C, Fr P, sets to glas below —60°C, sol in water 0.01% by wt at 20°C, sol of water in, 0.94% by wt at 20°C, Visc 12.9 cps at 20°C, R I (n_D), 1.4358 at 20°C. Suggested applications: intermediate for paint driers and other metal salts, ester type lubricants, and plasticizers. Availability: commercial quantities.

***iso*-Eicosanol**

A mixture of isomers with a purity above 90 per cent. $C_{20}H_{42}O$. M W, 298.56; Sp G, 0.8503 at 20/20°C; B P, 238°C (50 mm) and 194°C (10 mm); V P, (0.01 mm); Fr P, sets to glass below —40°C; sol in water, <0.01% by wt at 20°C; sol of water in, 0.37% by wt at 20°C; Visc, 138.8 cps at 20°C; R I (n_D), 1.4568 at 20°C. Outstanding feature: this product is a liquid whereas other known 20-carbon alcohols have been solids. Suggested uses: intermediate for detergents and petroleum chemicals. Availability: research quantities.

***iso*-Pentaldehyde**

C_4H_9CHO. A mixture of 5-carbon aldehydes consisting of valeraldehyde, 2-methyl butyraldehyde, 3-methyl butyraldehyde. M W, 86.14; Sp G, 0.8089 at 20/20°C; B P, 98.6°C (760 mm); V P, 32 mm at 20°C; Fr P, —95.4°C; sol in water, 0.85% by wt at 20°C; sol of water in, 2.2% by wt at 20°C; color, water-white; odor, sharp. Chemical properties: undergoes characteristic reactions of aldehydes. Suggested uses: as an intermediate for bisphenols useful in epoxy and polycarbonate resins; for aldehyde and modified formaldehyde resins derived from phenol, urea, protein, melamine, polyvinyl alcohol, cellulose and starch; as a corrosion inhibitor; as an intermediate for flavorings and perfumes. Availability: commercial quantities.

***iso*-Pentanoic Acid**

C_4H_9COOH. A mixture of 5-carbon acids consisting of approximately 55-65% 1-valeric acid, 35-45% 2-methylbutyric acid, and less than 5% 3-methylbutyric acid. M W, 102.14; Sp G, 0.9388 at 20/20°C; B P, 183.2°C (760 mm Hg); V P, 0.14 mm at 20°C; Fr P, —44°C, sol in water, 3.24% by wt at 20°C; sol of water in, 10.4% by wt at 20°C; color, water-white; odor, penetrating. Chemical properties: undergoes reactions typical of organic acids. Suggested uses: intermediate for plasticizers, synthetic lubricants, pharmaceuticals, metallic salts, vinyl stabilizers; extraction of mercaptans from hydrocarbons. Availability: commercial quantities.

2-Methyl-1-Butanol, Commercial

$CH_3CH_2CH(CH_3)CH_2OH$. A water-white liquid. M W, 88.15; Sp G, 0.8183 at 20/20°C; B P, 129.8°C (760 mm); V P, 2.3 mm at 20°C; Fr P, sets to glass below —90°C; Sol in water, 2.2% by wt at 20°C; Sol of water in 8.2% by wt at 20°C completely soluble in most common organic solvents. Undergoes reactions typical of alcohols. The *alpha*-methyl substitution gives added heat stability to esters. Suggested uses: chemical intermediate for mining chemicals, oil additives, pharmaceuticals, surface active agents, resins, plasticizers; for solvent applications. Availability: Commercial quantities.

2-Methyl-2-Ethyl-1,3-Propanediol

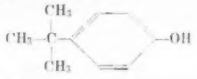
$HOCH_2C(CH_3)(C_2H_5)CH_2OH$. M W, 118.17; Sp G, 0.9598 at 50/20°C; Density, 0.9582 g/ml at 50°C; B P, 225.8°C (760 mm Hg) and 148°C (50 mm) and 115°C (10 mm); V P, <0.1 mm at 20°C; Fr P, 40.3°C, Sol, completely miscible with water at 50°C; Visc, 134 cps at 40°C and 66.4 cps at 50°C and 35.6 cps at 60°C; R I (n_D), 1.4433 at 50°C; Surface Tension, 31.1 dynes/cm at 50°C. Suggested applications: intermediate for heat stable, ester-type lubricants; intermediate for plasticizers, oil additives, polyesters, and pharmaceuticals; for resin synthesis. Availability: research quantities.

2-Methylpentanoic Acid

$CH_3CH_2CH_2CH(CH_3)COOH$. M W, 116.16; Sp G, 0.9242 at 20/20°C; B P, 196.4°C (760 mm); V P, 0.02 mm at 20°C, Fr P, sets to glass below —85°C; color, water-white; sol in water, 1.3% by wt at 20°C, sol of water in, 2.9% by wt at 20°C. Chemical properties: undergoes reactions typical of organic acids. The *alpha*-methyl substitution gives added

thermal stability to esters. Suggested uses: intermediate for synthetic lubricants, plasticizers, vinyl stabilizers, metallic salts, non-yellowing alkyd resins. Availability: commercial quantities.

para-Tertiary Butyl Phenol



$(CH_3)_3CC_6H_4OH$. A flaked, nearly white solid. M W, 150.21; B P, 236-238°C (760 mm Hg); Sp Gr, 0.9081 at 114/4°C, Fr P, 99°C; sol in water, insoluble; sol in alcohols, ether, and many other common solvents. Chemical properties: The two positions ortho to the hydroxyl group are available for reaction in forming derivatives. The tertiary butyl group can be removed, if desired, by heating with a strongly acid catalyst, leaving the ortho substituents in place. Suggested uses: Antioxidant in cellulose acetate molding compositions; starting material for the manufacture of oil soluble phenolic and modified phenolic resins for coating and impregnating applications, and for the manufacture of thermosetting and thermoplastic resins; intermediate for oil demulsifiers, pour point depressants, rubber vulcanizers and tackifiers, paint driers, antioxidants, insecticides, adhesives, odorants, and many other products. Availability: commercial quantities.

Propionitrile

$CH_3CH_2C{:}N$. M W, 55.08; Sp G, 0.7829 at 20/20°C; B P, 97.4°C (760 mm Hg); V P, 36.2 mm Hg at 20°C; Fr P —92.9°C; Purity, 93-95%; sol in water, 10.1% by wt; sol of water in, 5.8% by wt. Chemical properties: undergoes reactions typical of aliphatic nitriles. Suggested uses: selective solvent for petroleum hydrocarbons and fatty acids; polar reaction solvent; liquid dielectric; intermediate for pharmaceuticals, ion exchange resins, and insecticides. Availability: commercial quantities.

Tergitol* Nonionic NP-44

An alkyl phenol ether of polyethylene glycol. Physical characteristics, white solid: Sp G, 1.08 at 53/20°C; Solidification temp, 47°C; Cloud Point (0.5% aqueous solution), 115°C; Avg wt per gal, 8.9 lbs at 35°C; Purity, 100%. Outstanding features: High degree of water solubility at elevated temperatures and in presence of high concentrations of electrolytes. Suggested uses: in high temperature systems and for special emulsification applications. Availability: commercial quantities.

*Trademark

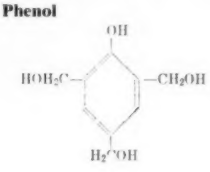
Thiodiglycol Diacetate

$(CH_3COOC_2H_4)_2S$. M W, 206.26; Sp G, 1.1465 at 20/20°C; Dens, 1.1442 g/ml at 20°C. B P, decomposes (760 mm Hg); 174°C (50 mm Hg); 142°C (10 mm Hg); V P, <0.01 mm at 20°C; Fr P, —22.1°C; sol in water at 20°C, 2.13% by wt; sol of water in at 20°C, 2.9% by wt; miscible in all proportions at 25°C with acetone, benzene, ethyl ether, methanol, carbon tetrachloride; sol in heptane at 25°C, 7.4% by wt; Visc, 6.0 cps at 20°C; R I (n_D), 1.4696 at 20°C. Chemical properties: undergoes reactions typical of esters; sulfur atom can be oxidized to sulfone. Suggested uses: solvent; chemical intermediate for sulfur-containing polyesters by ester exchange. Availability: research quantities.

1,2,3-Trichlorpropane

$CH_2(Cl)CH(Cl)CH_2(Cl)$. M W, 147.44; Sp G, 7.3916 at 20/20°C; B P, 152.8-156.9°C (760 mm Hg); Purity, 98.4%. Chemical properties: Undergoes reactions typical of alkyl chlorides. Suggested Uses: As a solvent for oils and greases; an extraction solvent; an intermediate for pharmaceuticals, insecticides, synthetic rubbers, resins. Availability: commercial quantities.

Trimethylol Phenol



$(CH_2CH)_3C_6H_2OH$. M W, 184.19 supplied as a 70 per cent aqueous solution. Visc, 50-70 centistokes at 25°C. Chemical properties: highly reactive because of its phenolic hydroxyl group and three hydroxymethyl groups. All four hydroxyl groups can be esterified and etherified. They are also reactive with many compounds containing active hydrogens, including alcohols, amines, sulfonamides, mercaptans, 1,3-diketones, phenol, and phenolic polymers. Suggested applications: can be used to impart water resistance to starch, natural gums, protein, cellulose ethers and other water-soluble colloids; polyvinyl alcohol and hydroxyethyl cellulose, when reacted with trimethylol phenol and baked, yield water resistant films having good adhesion to glass and wood; as a cross-linking agent for compounds or polymers containing active hydrogen groups; as a three dimensional cross-linking agent for epoxy and polyester resins and polyurethane prepolymers to produce hard and rigid structures. Availability: semi-commercial quantities.

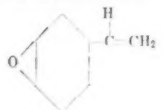
Valeraldehyde

$CH_3(CH_2)_3CHO$. M W, 86.14; Sp G, 0.8109 at 20/20°C; B P, 103.3°C (760 mm); V P, 26 mm at 20°C; Fr P, —91°C; sol in water, 1.35% by wt at 20°C; sol of water in, 1.30% by wt at 20°C; color, water-white. Suggested uses: as an intermediate for bis-phenols; for the synthesis of phenol, urea, protein, melamine, and polyvinyl alcohol resins; for flavorings and perfumes; corrosion inhibitors; methylolation to the triol. Availability: commercial quantities.

Valeric Acid

C_4H_9COOH. M W, 102.14; Sp G, 0.9406 at 20/20°C; B P, 185.5°C (760 mm); V P, 0.08 mm at 20°C, Fr P, —34°C; sol in water, 2.4% by wt at 20°C; sol of water in, 13.0% by wt at 20°C; color, water-white; odor, penetrating. Chemical properties: undergoes reactions typical of normal mono-basic organic acids. Suggested uses: intermediate for flavors, ester-type lubricants plasticizers, pharmaceuticals, metallic salts, vinyl stabilizers. Availability: commercial quantities.

Vinylcyclohexene Monoxide (1,2-Epoxy-4-vinylcyclohexane)



$C_8H_{12}O$. M W, 124.18; Sp G, 0.9598 at 20/20°C; B P, 169°C (760 mm); Fr P, sets to glass below —100°C; V P, 2.0 mm Hg; Visc, 1.69 cps at 20°C, R I (n_D), 1.4700 at 20°C; Sol in water, 0.50% by wt at 20°C; Sol of water in, 0.65% by wt at 20°C. Chemical properties: The epoxy ring is opened by water, alcohols, phenols, carboxylic acids, and other reagents containing active hydrogens; hydrogenation gives ethyl cyclohexanol. Suggested uses: Chemical intermediate; can be copolymerized with other epoxides to yield polyglycols having unsaturation available for further reaction; copolymerization through vinyl group gives epoxide-containing resins capable of further reaction. Availability: Development quantities.

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UNION CARBIDE CORP SILICONES DIV
30 East 42nd St
New York 17, N Y

Union Carbide* XLE-48 Silicone Textile Softener

A new, nonionic silicone emulsion designed specifically for softening high quality thermosetting finishes. It offers the established advantages of silicone softeners, such as high tear strength, abrasion resistance, and enhancement of sewing properties. It is claimed that its high durability toward repeated washing and dry cleaning, its outstanding resistance to scorching, yellowing, and water spotting, and its complete resistance to chlorine damage provide a high quality, high performance softener. In addition, Union Carbide XLE-48 Silicone is said to possess two important characteristics not available in other durable softeners—outstanding resistance to wet soiling (redeposition of soil) and improved release of soil during laundering. Whether used as a self-finish or in combination with finishing resins, one to two percent of Union Carbide XLE-48 Silicone Textile Softener is normally sufficient to produce greatly improved fabric properties. Since normal fabric drying time is said to impart excellent durability with XLE-48, catalysts and curing are not required with this softener. When curing is required for thermosetting materials in mixed formulations, the outstanding properties of XLE-48 are not altered. In addition to softener uses with thermosetting resins, Union Carbide XLE-48 Silicone is claimed to be an excellent self-finish which enhances abrasion resistance, sewing properties, and hand for both natural and man-made fibers. Other uses where the outstanding properties of XLE-48 are of importance are: yarn lubrication, non-woven fabric softening, latex release agents, and warp sizing.

*Registered trademark

* * *

VERONA DYESTUFFS
Springfield Rd
Union, N J

Edolan* U High Conc

This product is claimed to represent the most versatile mothproofing agent available to the woolen industry at the present time. Edolan* U High Conc is said to possess unequalled fastness properties and offers protection against the larvae of moths, carpet beetles, and furriers beetles. It can be applied at practically all stages of wool processing and is said to exhibit excellent fastness to mill processing and weaving, including repeated dry-cleanings and home washings. In addition, Edolan* U High Conc is said to possess outstanding levelling properties and shows no yellowing of the wool fiber.

*Registered trademark

Levegal* PAN

Levegal* PAN is a new and highly effective levelling agent for dyeing Orlon** with cationic dyestuffs, such as the Astrazons*. It functions as a retarder for the rate of dyeing, particularly in pastel to medium shades, and also in certain heavy shades where cationic dye types of high exhaust rates are used.

*Registered trademark
**Registered trademark of Du Pont

* * *

VIKON CHEMICAL CO
P O Box 277
Elon College, N C

Dai Cari HS

A carrier for dyeing dispersed colors on cellulose triacetate fibers. It is also a balanced carrier for cellulose triacetate and polyester fiber blends.

Plon ES

A chemically unique softener for wash-and-wear finishes on cotton and rayon which is said to provide a combination of high tear strength and high abrasion resistance with high resistance to yellowing and a soft smooth hand. The product is further said to be fast to washing in resin finishes. It is especially effective in broadcloth wash-and-wear finishes.

* * *

WARWICK CHEMICAL CO
A DIV OF SUN CHEMICAL CORP
Wood River Junction, R I

Norane* R-3

This is a quaternary ammonium durable water repellent compound. Useful for the treatment of cotton, rayon, and blends with synthetics. It is said that it produces outstanding durability to both washing and dry cleaning. Compatible with various thermosetting resins to produce combination water repellent-wash-wear treatments.

*Registered trademark

Norane* RK

An anionic thermosetting resin dispersion, designed as a durable water repellent for hydrophobic fibers such as acetate, nylon, and Dacron. Compatible with thermosetting resins for combined water repellent for stiffening or firming effects. It is said to have excellent running properties.

*Registered trademark

Permafresh* 424

This methylolated carbamide resin has been formulated so as to contain a very low free formaldehyde content, thus reducing the odor on the treated fabrics. It is said to be excellent as a crease resistant and wash-wear treatment for cotton and rayon, and blends of these with synthetics. It is further said to be especially effective for stabilization of cotton knit goods. Shows little or no effect on the light fastness of sensitive dyes. Very economical to use.

*Registered trademark

Permafresh* LF

This remarkable fiber reactant is said to be chlorine resistant, and in addition, does not adversely affect the light fastness of sensitive dyes. A dimethylol cyclic nitrogen compound which is used for crease resistant and wash-wear treatments on cotton and rayon fabrics, and blends with synthetics. Also said to be very useful to produce durable mechanical finishing effects such as glazing, schreinering, embossing, and pleating.

*Registered trademark

Permafresh* Softener PE

A polyethylene emulsion said to be of excellent stability and wide compatibility. It is stated that it is effective to improve tear strength, crease resistance, abrasion resistance, and sewability of textiles, especially resin treated fabrics. Non-chlorine retentive. It is said to have excellent wash fastness.

*Registered trademark

Permafresh* SYN

A partially condensed methylolated carbamide resin which is said to produce bodying and firmness on acetate, nylon, and other hydrophobic fibers. It is also said to produce crease resistance and shrinkage control on cellulosics with resilient bodying.

*Registered trademark

Warcofix* 403

A guanyl urea formaldehyde resin which is used to upgrade the fastness properties of direct dyestuffs. It is said to be unusually effective and very economical to use.

*Registered trademark

Warcopel* C

This thermosetting, hydrophobic resin dispersion is designed particularly as a durable water repellent for cotton fabrics. Compatible with a wide range of thermosetting and thermoplastic resins. Simple and economical to use.

*Registered trademark

* * *

WICA CHEMICALS, INC
P O Box 506
Charlotte, N C

Cequestall OH

A chelating agent specifically for alkaline pH conditions. As a totally new concept in sequestering, it is stated that it will tie up to five times its own weight of iron as well as being extremely effective against calcium and magnesium. Especially recommended by the manufacturers for prescour, bleaching and vat dyeing operations.

Wica Carrier

Wica Carrier is especially recommended by the manufacturers as an assistant in dyeing Dacron and other polyester fibers as well as blends with other synthetic and natural materials. Freely dispersible in water, the hazards of spotting are reduced to an absolute minimum since it is not necessary to precipitate out of solution. Level, bright and clear dyeings are obtained.

Wicaloid 1615

A 35.0% solids latex compound based upon Dow Latex X-2582. Especially recommended by the manufacturers for the backcoating of flat goods where excellent resistance to fraying, raveling and slippage is desired. This latex is said to provide soft handle, superior resistance to light and heat degradation and excellent flexibility. The chemical nature of the polymer eliminates any tendencies for odor development.

Wicaloid BS

A 35.0% solids butadiene/styrene type synthetic latex compound. It is used in the backcoating of upholstery flat goods where a soft handle is desired. Wicaloid BS is said to provide fiber lock, dimensional stability, seam slippage resistance and fine flexing factor. Wicaloid BS is a completely compounded material that includes a nonstaining cure and its resistance to light and heat degradation is said to be excellent.

Wicaloid DL-117

Fully compounded as bulk latex using Dow Latex X-2582. Curing system is said to impart maximum resistance to effects of heat, light and atmospheric gases. Advantages include wide modifications of flex and penetration control along with excellent capacity for clay loadings. Compound is prepared at low viscosity for ease of handling and modifying. Solids specification is 39.0-41.0.

Wicaloid LM

A fully compounded butadiene/styrene latex compound. Contains 36.0% solids and is especially compounded for the frieze and pile fabric field where coating is necessary prior to scouring and dyeing. It is recommended by the manufacturers for nylon and acetate containing fabrics because of its special non-staining cure. The backcoating is said to prevent slippage and increase seam strength while providing the highest degree of light and heat resistance consistent with strong adhesion and high tensile strength.

Wicaloid ST

A 35.0% solids synthetic latex compound of the GRS type with special non-staining curing system. It is fully compounded for immediate use and is said to possess unusual light and heat aging properties. It is similar to Wicaloid BS except for additional considerations being made to provide more firmness of hand.

Wicatex FB Emulsion

A nonionic straight polyethylene emulsion. Extremely fine particle size and neutral pH. This emulsion is used as a pure finish or as an additive to recipes where softening and lubricity of natural and synthetic textiles is desired. Improved qualities of abrasion resistance, tear strength, sewability and reduced needle cutting are said to suggest its use in many applications. It does not tend to yellow white goods or affect the shade of dyed work. It is stated that its resistance to light and heat degradation as well as being nonchlorine retentive makes it of interest in resin finishing.

Wicatex MA-6 Softener

A nonionic textile finishing agent for use in softening and lubricating cotton and synthetic fibers. Also used to plasticize hard film-forming agents from the resin bath. Recommended by the manufacturers in piece finishing operations and as an additive to resin baths because of its extremely high resistance to yellowing and odor formations. Also highly resistant to discoloration by light and heat. Plasticizing polyvinyl acetate emulsions, starches, gums, etc. with MA-6 is said to be very effective and less tendency is noted for film-forming ingredients to stick to hot cans.

Wicatex T Softeners

A group of highly sulfated tallow products with considerations included to insure a maximum degree of resistance to light and heat degradation. Offered in concentrations of 75.0—50.0—38.0 percent total fat content. Recommended by the manufacturers to impart softness, drapiness, body, fullness, absorbency and lubricity to natural and synthetic fibers and fabrics.

Wixol

A group of highly sulfated vegetable and animal oils. Special considerations are manufactured into the products to provide for the customer's specific desires. Extremely high resistance to light and heat degradation while providing qualities of softness, lubricity, drape, absorbency, wetting and rewetting is said to be provided. Used in rawstock, yarn and piece goods wet processing.

EQUIPMENT

BRABENDER CORP
Rochelle Park, N J

Improvements in Semi-automatic Moisture Tester

Latest improvements in the Company's Semi-Automatic Rapid Moisture Tester are as follows:

1) A slowly rotating turntable—at approximately three rpm—driven by a separate gear reduction motor and operated by a separate switch to insure that all samples are subjected to the same drying conditions.
2) An improved illuminated dial system from which one reads moisture loss directly in percent—with a new percentage scale having .1% graduations, with all figures greatly magnified.
3) The Null Point Adjustment feature.

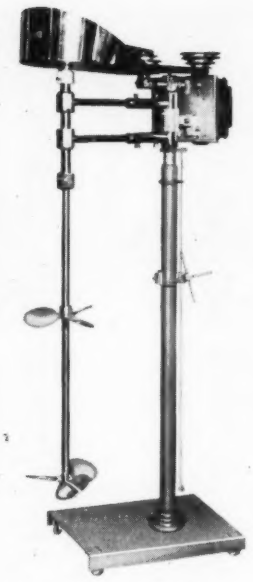
Available Test Dishes

1) Calibrated, aluminum dishes—rims ⅝" high—weight 11.500 grams.
2) Calibrated, aluminum dishes—rims 1-¼" high—weight 20.500 grams.
The above dishes are also available with a Teflon coating inside, for test materials which would otherwise adhere to the plain aluminum, making the cleaning laborious and time-consuming.
3) Calibrated, textile baskets, perforated all around and with perforated covers—approximately 1¼" high—weight 20.500 grams.
4) Calibrated, stainless-steel dishes.

CONSOLIDATED SUPPLY CO, INC
TERRIS DIV
22 Wooster St
New York 13, NY

Three-Speed Portable Mixer

This three-speed portable mixer for stirring, blending, mixing and agitating comes equipped with rollers for portable operation, and both the propeller and stand shafts are adjustable for unlimited settings for "above-and-below" floor level tanks. All parts which come in contact with ingredients are of stainless steel. The mixer is fitted with standard belt drive for propeller speeds of 175, 325 and 575 rpm. The ¼ HP motor is equipped with 6" blades on the mixing shaft, the ½ HP with 8" blades, and the ¾ HP with 10"



3-Speed Portable Mixer (Consolidated)

blades. Various other combinations of blades to 18" with larger HP motors are available.

Stainless-Steel Line Strainer

The stainless-steel Terriss Line Strainer has been designed for filtration of fluids containing foreign solids. It has a rated flow capacity of 1000 gph with maximum view glass pressure of 50 psi. Overall size of assembled unit is 6½ x 6½ x 13" high. The complete stainless-steel construction reportedly permits a wide application in the processing industries. Strainer is made "to clean in place" by opening clamp fitting at top and removing the filter screen. Air-vent adjustment is said to permit easy releasing of air-bound lines. The unit can be supplied with inlet and outlet fittings to specification. Filter screens are available in a variety of meshes to meet plant application.

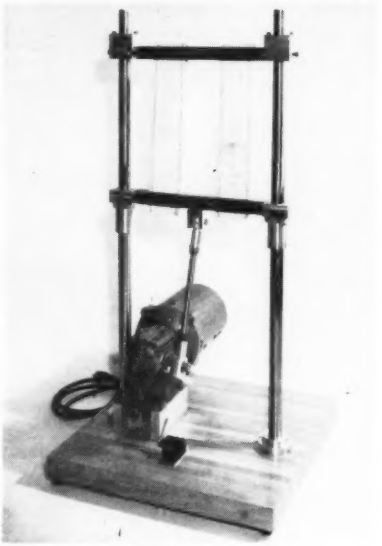
* * *

CUSTOM SCIENTIFIC INSTRUMENTS, INC
Kearny, N J

Elastic Tester

This unit reportedly will flex four 1.5-inch-, two 3.5-inch-, or one 8-inch-wide samples. The length of the samples can be up to 10 inches. The stroke of the unit can be set between 0 and 8 inches, and the tester operates at 58 cycles per minute. A counter is an integral part of the unit.

Stainless-steel Line Strainer (Consolidated)



Elastic Tester (CSI)

EXACT WEIGHT SCALE CO
538 East Town Street
Columbus 15, O

Basic Weight Classifier

The Basic Weight Classifier is a new instrument for quality control in textile mills, which

Basic Weight Classifier (EWSC)

is said to be capable of proving weight accuracies in the range of one part in 5,000 to one part in 20,000.

It provides electronic signals which indicate correct weight, over, or under weight within preset weight limits. Any number of classifications from two to 128 may be used.

The Basic Weight Classifier can be used to control processing and production equipment, operate signals, actuate mechanisms and record data. It reportedly will handle textile products from a few milligrams up to 100 pounds.

* * *

FARRAND OPTICAL CO, INC
Dept T-1, Bronx Blvd & E 238th St
New York 70, N Y

New Types of Spectrofluorometer

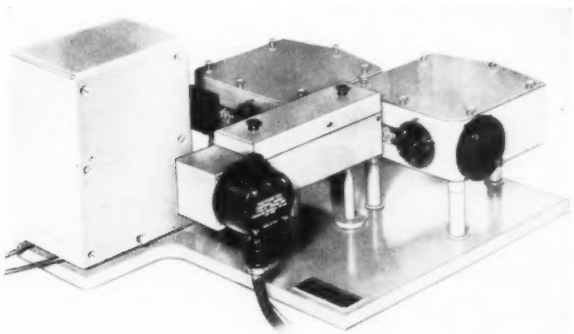
In addition to its standard spectrofluorometer, the Company now has available two new types.

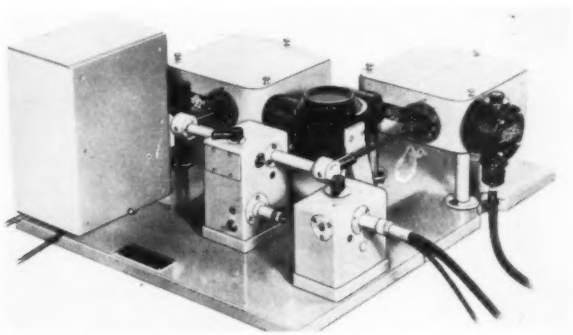
One is a dual-purpose instrument for spectrofluorometric transmission measurements in the spectral region from 220 to 650 mu.

The second is a triple-purpose instrument which can be utilized as a spectrofluorometer, spectrophotometer or for reflectance measurements of solid samples, such as textiles.

Farrand Spectrofluorometers can be supplied for manual operation, for automatic operation with recorders, or for oscilloscope presentation.

Descriptive Bulletin No. 820, Supp 1, is available from Farrand on request.





Two new types of Farrand Spectrofluorometers

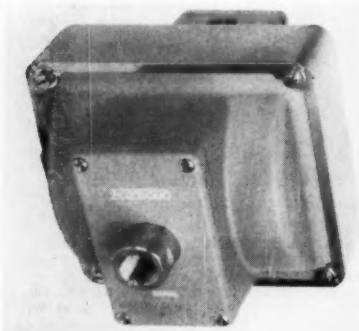
FOXBORO CO
Foxboro, Mass

Control of Weak Sodium Hyprochlorite

Foxboro Conductivity Control is now being used to maintain proper concentration of weak sodium hypochlorite solutions in saturators. Strong sodium hypochlorite is added automatically, as needed, to compensate for dilution by wet cloth entering saturator. Instrumentation, consisting of new plastic-coated measuring element, controller and valve, will control at any strength desired, usually two grams per liter of available chlorine, NaOCl.

1/10 and 3/16" Magnetic Flow

Developed for 1/10" and 3/16" flow lines, new meters measure full scale flow rates as low as 0.1 gallons per minute. Now being used in synthetic textile plants. Said to be ideal for ratio flow applications involving low volumes of viscous or corrosive liquids, such as pigment dyes added to dope lines and acetic and formic acids added to cloth agers. Can also be used on hypochlorite and starch solutions. Uniform scale divisions; accuracy, ±1 percent of full scale.



1/10" Magnetic Flow Transmitter (Foxboro)

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GARDNER LABORATORY INC
P O Box 5728
Bethesda 14, Md

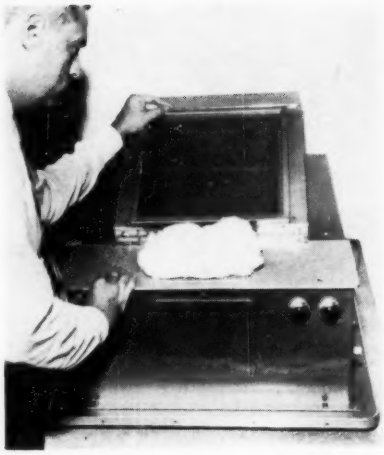
Gardner Colorgard

The Gardner Colorgard, a new automatic colorimeter for production control of the color of raw cotton, is also adaptable to production control of the color of textiles, chemicals, cellulose materials, etc.

In general, the Colorgard can be employed in processing wherever the color of a yellowish-white raw material, semifinished or finished product is a factor in quality control. Thus, the field of application of the Colorgard, or its subsequent modifications, embraces such industries as referred to above. In many of these industrial applications a Colorgard reportedly can replace the painstaking and tedious work of making careful visual determinations, which depend greatly on the skill and judgment of an individual, with a precise unbiased laboratory-type of photo-electric measurement.

In the grading of raw cotton, the instrument automatically shows values of reflectance (R_d) and yellowness (+b) on a two-dimensional chart when the operator places a sample of cotton over the sample window and depresses a button switch to operate the instrument. A chart of the color of the cotton grade standards appears on the glass panel on which the "R_d" and "b" scales are indicated. Consequently, the operator can check against a particular position within each grade and can pass or fail a sample by comparison of this point with a standard position indicated on the Colorgard chart.

For cotton, a pilot of (R_d) against (+b) is required. For some other product, a plot of (+a = redness) or (—a = greenness) against (+b = yellowness) or (—b = blueness) might be required, with (R_d = reflectance) indicated on a separate scale. In practice, there are a great many possibilities for the application of the Colorgard in color inspection and grading work where a limited range of color



Front view of Colorgard showing scale and a cotton sample in position over the exposure aperture. Operator's right hand is on actuating switch.

is to be determined. In such applications, modifications to the instrument can be made to accommodate specific requirements.

In operation of the Colorgard, the sample to be tested is placed over the exposure window, and the actuating button is depressed. This action switches the Colorgard to the measuring position by horizontal movement of a flapper directly under the exposure window. This flapper automatically moves away from the exposure window, allowing the light beams to strike the sample in the exposure area. As a result, two indicators under the chart diagram automatically move to a position of balance. These indicators lie under the translucent screen on which the color values are indicated by black lines. They are illuminated by a lamp in such a manner that they cast their shadows on the translucent screen, thereby indicating to the operator their measured values on the screen from the opposite side. After the actuating button is released the flapper returns to position which closes the exposure window. The specially painted underside surface of the flapper acts as a standard when samples are not being measured and the exposure window is closed. The light beams reflected from the surface of this standard are directed to the photocells and by means of special circuitry keep the instrument standardized automatically at all times.

* * *

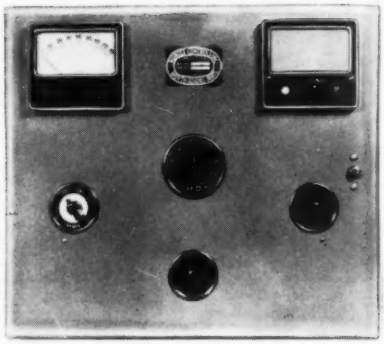
HUNTER CONTROLS, INC
North Adams, Mass

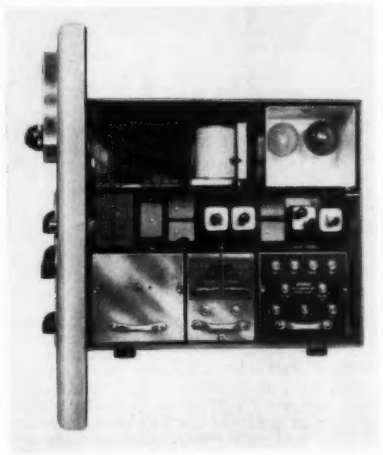
"Modular" Hunter Electro-Psychrometer

This new unit features plug-in electronic circuitry throughout, an advance in the design of the automatic moisture measuring and control device that has proven effective in resin-finishing ranges and slashers which reduces downtime for component replacement to a matter of minutes. By maintaining a basic stock of spare components, designed to plug into the modular chassis as simply as a radio tube, a mill reportedly can maintain maximum moisture control while the defective component is being repaired. The repaired component, in turn, can be placed in stand-by stock.

Other features of the new unit include a new simplified external control panel; an increase in the flexibility of the instrument's pre-set control range; provision in the circuitry for operating multiple controls, such as heat regulators; and a built-in calibration circuit, which assures completely automatic operation at all times.

Controls covering up to eight different variations in production requirements are pre-set at the time of installation on a "punch board" type panel mounted on the chassis. Alterations in the settings can be made easily whenever they are required. Changes in the settings are made by flicking the Control Pulse Selector Switch, mounted on the External Control Panel.





Front and side views of "Modular" Hunter Electro-Psychrometer

A four-position switch attached to the chassis controls the built-in calibration circuit.

Optional on the new Hunter Psychrometer is an internally-contained recorder, which furnishes a yard-by-yard analysis of the entire processing run.

Hunter Controls, Inc is the exclusive Western Hemisphere licensee to manufacture and sell the world-patented Eicken System Electro Psychrometer. The instrument reportedly provides precise instantaneous moisture detection and control by utilizing a sensing system which electronically weighs all three electrical phenomena generally relied upon individually for moisture measurement and control.

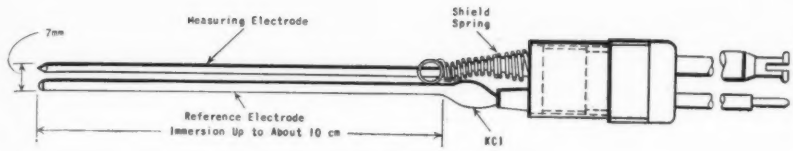
* * *

LEEDS & NORTHRUP CO
4934 Stenton Ave
Philadelphia 44, Pa

Miniature pH Electrode Assembly

This new miniature pH electrode assembly is offered for use with samples ranging in size from one drop up. The two electrodes, reference and measuring, can be inserted in an opening of 7 mm dia, and a flexible electrode support then permits the user to squeeze the two elements together and thus accommodate the single-drop sample, as for instance in the tip of a centrifuge tube. Self-shielding of the measuring electrode is said to eliminate the compartmental shielding usually required and avoid the need for sample transfer. Use of the assembly is not limited to small samples, however; it may be used at any electrode immersion of 10 cm or less. The pH range is 1 to 11.5; temperature range for sample is 15 to 40 C. The measuring instrument recommended by the maker for use with this electrode is L&N No. 7664 pH Indicator.

The electrodes are said to resist breakage



Miniature pH electrode (L & N)

because of their flexible mounting, and the outer tube of either electrode may be replaced inexpensively if broken. The internal electrode elements are permanent parts of the head assembly. The reference electrode holds several days' supply of its 2N KCl solution, and quantities of both this solution and of buffer solution for the measuring electrode are shipped with the assembly.

* * *

MOUNT HOPE MACHINERY CO
15 Fifth St
Taunton, Mass

Skew-Liner

The Skew-Liner is an automatic skewed weft straightener, which may be purchased or rented on a lease.

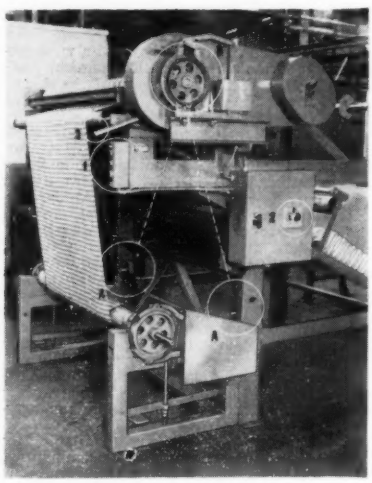
The cloth is threaded through the unit, and then, with the weft properly aligned, control adjustment is set at "zero". Feeler rolls transmit filling distortion to warp threads to be picked up by detector wheels. Detection unit triggers action of the pivot roll to eliminate skew.

Automatic Stop on New Continuous Roll Feed

An advanced safety and convenience stopping feature is now available with new Continuous Roll Feed units manufactured by the Company. As let-off roll runs out, a photoelectric mechanism (A) (see illustration) triggers braking action (B), which prevents coasting of the nip rolls and motor, thus stopping end of cloth from running through. The new device reportedly eliminates the dangerous practice of trying to stop cloth manually. In addition, less operator attention is required when new roll is about to be sewed on.

Other features are:

1) A jog button permits unwinding of the remaining yard or two of cloth on the let-off rolls.
2) Warning light to let operator know that the power is on and if nip roll motor has stopped it will start again when cloth level control calls for more cloth in scray.
3) Nip roll release lever automatically cuts out motor when rolls are denipped. Allows operator to safely thread through nips or pull cloth back for sewing.



Continuous Feed Roll (Mount Hope)

NARDA ULTRASONICS CORP
625 Main St
Westbury, N Y

Narda SonBlaster® Ultrasonic Cleaner

An ultrasonic cleaning unit consisting of generator and tank with integral transducer. Tank sizes: ½-gallon to 75 gallons. Cleans and degreases metal, glass, plastic parts or complete assemblies (spinerettes, jets, instruments, laboratory glassware). Cavitating action penetrates the finest interfaces. Reduces cleaning time as much as 90%. Eliminates need for strong acid and alkaline solutions. Can also be used for laboratory mixing, research and experimentation in wet finishing and chemical processing.

* * *

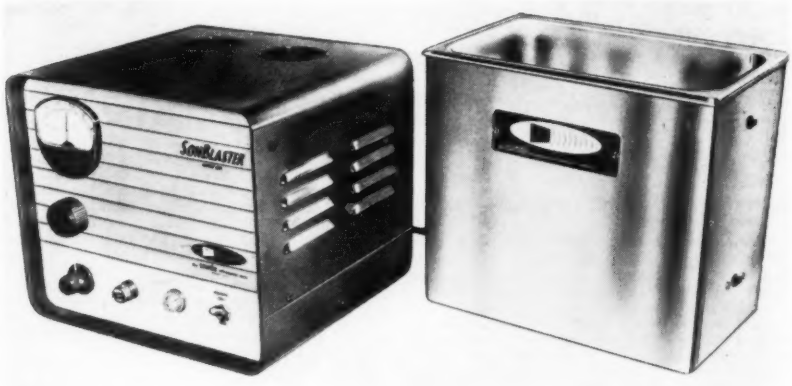
NEW BRUNSWICK SCIENTIFIC CO
Somerset St
New Brunswick, NJ

Model CD Drying Oven

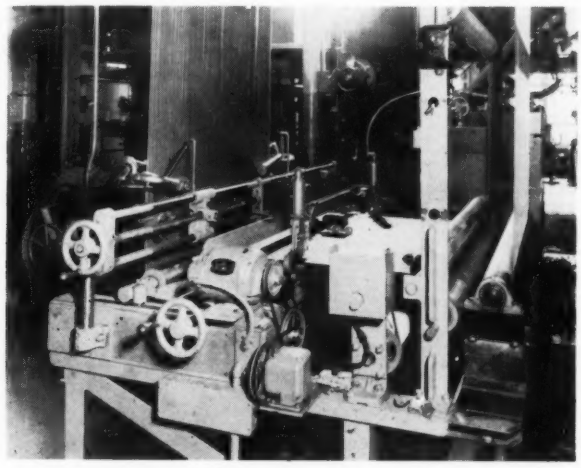
This new drying oven has been developed for use in paper chromatography, which offers a method of separating and analyzing, on filter paper, of minute quantities of organic or inorganic compounds—a laboratory technique that is finding increased application in industrial control procedures and research in the dyestuff, paper, and paint fields.

Reportedly engineered to provide the utmost in convenience and dependability, this equipment is said to combine the advantages of full-view color development, compactness of size, and moderate cost.

Special features inherent in the construc-



A typical Narda SonBlaster ultrasonic cleaner consisting of generator and tank with integral transducer.



Automatic Skew Liner (Mount Hope)

Model CD Drying Oven (NBSC)

tion include the metal-reinforced safety glass door, which affords a continual and complete view of the drying action or the color development of the chromatograms, thereby eliminating need for repeated opening of door. The oven heats to a preset temperature up to 110°C within about 20 minutes, and three full-sized sheets (18¼" x 22½") can be accommodated simultaneously. Only 33½" high, 27" wide and 14" deep at base, with a 7" inside depth of heating chamber, Model CD can be placed on any laboratory bench equipped with a water aspirator, or can be mounted on a wall.

Evacuation of air and solvent vapors is accomplished by attaching the exhaust outlet to an ordinary water aspirator or to a small aspirator motor pump connected to an exhaust hood.

Insulated with glass wool (except for door), Model CD is designed to assure a uniform drying action. A continuous intake of fresh air from the outside is heated to desired temperature. Direction of air flow is from bottom to top, and the baffles at bottom of chamber are arranged to conceal the heating elements as well as to avoid danger of combustion from solvent droplets. Oven interior is lined with stainless steel and there is said to be a minimum of heat loss by radiation. Gasket-lined door with positive latch reportedly affords leak-free operation.

Removal stainless-steel paper support rods are located for handling of paper. Photography clips may be used, however, for removal of individual chromatograms while rods remain in place.

The sloping instrument panel, on which are mounted the thermostat, pilot light and on-off toggle switch, forms front of base whose generous width assures stability whether door is open or closed. Base rests on rubber mounts which provide grip and protect table top. Unit is supplied with an eight-foot cord and plug for use with 117 volt, 60 cycle AC.

* * *

RADIO CORP OF AMERICA INDUSTRIAL AND AUDIO PRODUCTS DEPT

30 Rockefeller Plaza
New York 20, N Y

X-Ray Diffraction and Spectroscopy Equipment

Principal unit being offered by RCA is a console model said to be capable of virtually any type of X-ray diffraction or spectroscopy work in the fields industrial or research chemistry.

A complementary table top model is designed primarily for use by schools and smaller laboratories, although it may serve as a supplementary unit in larger operations, handling remote stress tests on bulky materials and freeing a companion console for other projects.

The table surface of the console model is ample for two counter diffractometers or one diffractometer and a Guinier camera. A third window in the shield support can take a flat, cylindrical or stereo-micro camera. The X-ray diffraction tube can be operated outside the apparatus itself by means of a high-voltage cable.

The console, a completely self-contained generating unit requiring a minimum of floor space, is said to offer the scientist or industrial laboratory technician the finest possible instrument for a wide variety of functions—qualitative and quantitative identification of chemical substances, stress tests of solid materials, measurement of crystal sizes, identification of alloy compounds, and the study of various chemical reactions.

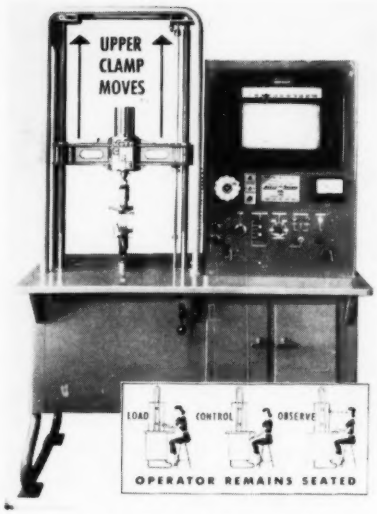
* * *

SCOTT TESTERS, INC

63 Blackstone St
Providence, RI

Model CRE Tensile Elongation Tester

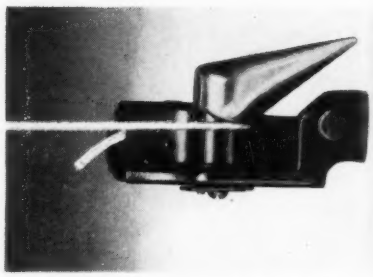
This tester incorporates a radically new design concept, which reportedly makes possible for the first time a constant-rate-of-extension tester of highest attainable precision at moderate cost. Constant extension of specimen is accomplished on the Scott



Model CRE Tensile Elongation Tester (Scott)

CRE tester by upward moving crosshead, which pulls the top holding clamp away from the lower fixed clamp at precisely uniform speed (any rate, as selected, from 0.05" to 20"/min), to a length of extension up to 70" of crosshead travel. The automatic electric weighing system measures the resultant force and the registration of the stress-strain cure is permanently charted on a visual recorder. Ratio of chart travel to crosshead upward travel reportedly may be varied to magnify stress-strain curve as much as 400:1, permitting analysis in detail of ultimate tensile, yield point, elastic limit and other variables.

A basic CRE tester "tailored" for a particular production test operation can be obtained complete at a low cost. To this basic tester can be added a variety of optional features for laboratory versatility. These may be included initially or added at any time later in the field by the user's nontechnical personnel. The CRE tester is said to have capacities from 0-.05 lb to 0-1,000 lbs or 0-25 grams to 0-500 kgs tensile; is a single self-contained unit, floor mounted, free standing, with levelizer feet; requires a single power input. It has mechanical drive; is automatically self-reversing to return the crosshead to starting position. Operation is simple, all controls being within reach of operator while seated. Because the bottom clamp is fixed, loading of the specimen is conveniently in front of seated operator. The CRE Tester is designed to use the more than 150 Scott clamps and fixtures for holding all types of materials, in conformance with standard as well as the most advanced ASTM, ISO, Government and Industry test methods.



Horn Guide Clamp (Scott)

A quick-insertion automatic centering yarn guide has been added to STI's heavy yarn and cord clamp.

The new horn guide on the side-insertion clamp is said to give the operator utmost speed in locating the yarn specimen at the exact center line of the pulling force. These clamps are made in two sizes, for 75 and 400 lbs pull, and the locking cam is adjustable for various diameters of cords or yarns.

* * *

TECHNICON CONTROLS, INC

Chauncey, NY

Technicon AutoAnalyzer*

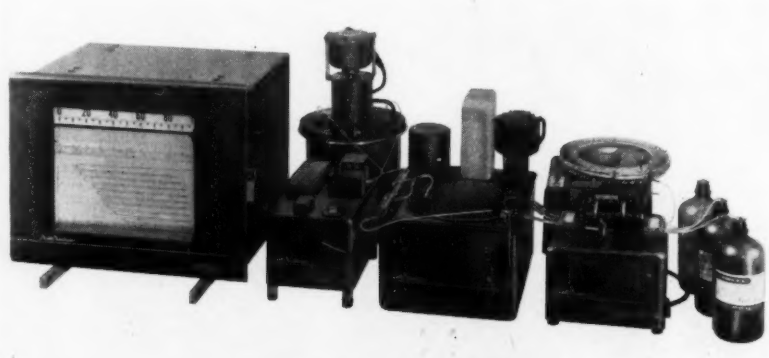
The Technicon AutoAnalyzer is a new system for continuous automatic chemical analysis, which reportedly can detect trace materials down to parts per billion, with an accuracy of 1%.

By automating each step of a chemical analysis now performed manually ie, measuring, mixing, purifying, processing, comparing and recording, and integrating them into a continuous flow system, the AutoAnalyzer is said to provide accurate, dependable analysis with exact reproducibility.

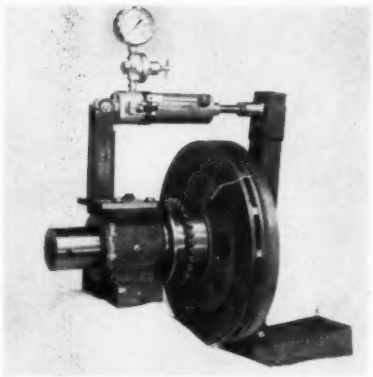
In the laboratory, it reportedly runs twenty, forty, or sixty tests per hour without human supervision. In the plant, the AutoAnalyzer can be hooked up to the process or waste stream, liquid or gas. The concentration level of any material or number of materials can be continuously monitored and permanently recorded. If desired, the control loop can be closed to automatically monitor the steady-state control devices or otherwise regulate the process through "on-stream" continuous measurement.

AutoAnalyzer systems are available for single or multiple component determinations. The Technicon system is presently analyzing levels of concentration of such materials as cyanides, sulfur dioxide, silica, phosphates, iron, chlorides, copper, sulfates, ammonia, sugars, aluminum, and a host of other materials.

*Trademark



The Technicon AutoAnalyzer



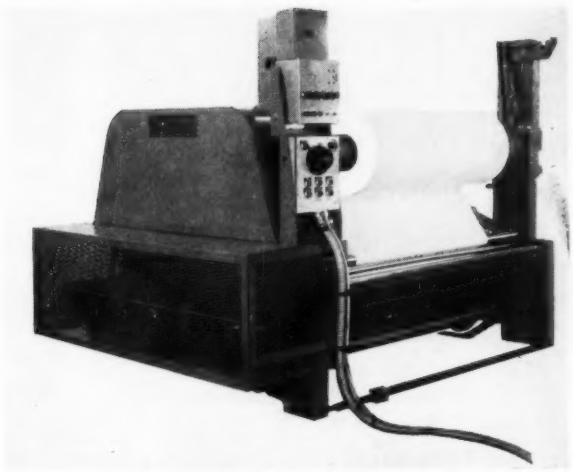
Air Set Friction Drive (Werner)

WERNER MACHINE CO, INC
Passaic, N J

Air Set Friction Drive with Automatic Control Tension

The Air Set Wind-up takes the place of the old style slip belt wind-up with jaw clutch and belt tightener pulley. The chain drive of the Air Set Wind-up is positive. On and off operation is by finger tip flip of the air switch mounted on the air cylinder. The air gauge with reducing valve permits air setting from light friction for loose rolls to heavy pressure for very tight rolls. An added advantage is the ability to duplicate the settings from time to time so that each type of cloth can be wound up with the desired tightness of all rolls even though not run on the same day.

The large surface and long wearing qualities of the molded friction plates is said to make for very economical operation of the Air Set Wind-up. Considering the high cost of belt replacements alone without regard to mechanical wear of the old slip belt wind-up it is claimed that this new unit should pay for itself in a short time and give better and more uniform wind-up work. This unit can also be used as a let-off brake. In either capacity, as wind-up or let-off an added optional feature not shown by the illustration, is automatic control of the cloth tension which can be maintained uniformly at any desired set amount.



Electronic Drive Jig (Werner)

Electronic Drive Jig With Removable Beam Roll*

Werner's new jig is claimed to be processing two to three times the cloth which a standard jig can process in the same time. The speed range is 0 to 175 yards per minute and constant lineal speed throughout a run is said to be held absolutely at any setting. A full 36" diameter roll can be run. Tension is controlled electronically with a knob setting and any fabric from a lastex to a corduroy can be handled. Acceleration to the set speed is gradual over an eight second period to eliminate all shock loads on the cloth when power is applied. It is stated that loading and unloading time can be eliminated by use of the removable beam which takes the place of the usual wood shell on the beamer, frame, etc, and is placed on the jib directly with a centering chuck. However, standard procedure of loading and unloading using a wood shell with the regular rubber beam roll is also possible with the added advantage of the wide controlled speed range.

The jig has extra heavy cast iron frames, a 7.5 HP AC motor drive with electronic couplings, panel and push button controls. Automatic reversal control is an optional feature. The stainless steel tank has an added 4" diameter stainless steel roll not submerged and located across the center of the tank to give improved dye liquor penetration to the fabric.

*Patents pending

HIGHLIGHTS OF THE PAST YEAR

P J WOOD
Technical Director
Royce Chemical Co
Carlton Hill, N J

EDITOR'S NOTE: It is a pleasure to bring to our readers for the ninth consecutive year Mr Wood's "Highlights". Many of Mr Wood's observations cover material that has not appeared elsewhere in the American textile trade papers.

MISCELLANEOUS

HERE is a reference to an article in a Russian journal, which might be worthwhile looking up; likewise, two or three various patent references we came across in the course of our reading during the past year.

(1) "Automation in Bleaching & Finishing," Ivliev, V G, *Textil Prom* 17, 30-35, May 1957.

* * *

(2) "Wet Processing of Fibrous Materials—Kroy Unshrinkable Wools" U S Pat 2,742,773.

The goods are carried through the liquor while being tightly held between two reticulated conveyors. During their passage through the liquor they pass between two pairs of rollers which are vibrated rapidly through a small amplitude. This gives quick, even treatment with good penetration.

* * *

(3) "Apparatus for the Wet Processing of Cloth and the Like," Springs Cotton Mills, Brit Pat 781,741.

A machine in which the fabric enters at open width into and out of the liquor several times. The liquor flows in the opposite direction to the cloth and is channelled transversely widthwise of the cloth at each immersion.

(4) "Oscillating System for Impregnating Sheet Material," Smith, E W, U S Pat 2,741,111.

In a machine in which the cloth is led by guide rollers into and out of the liquor several times, treatment is much speeded up if whole of the cloth in the machine is vibrated perpendicularly to its line of travel. A driving system for effecting this is described which is highly efficient and can be easily controlled.

* * *

(5) "Piece Dyeing Machine," Rodney Hunt Machine Co, U S Pat 2,741,112.

Two circular winches of the same size and the same height above the liquor, etc, etc.

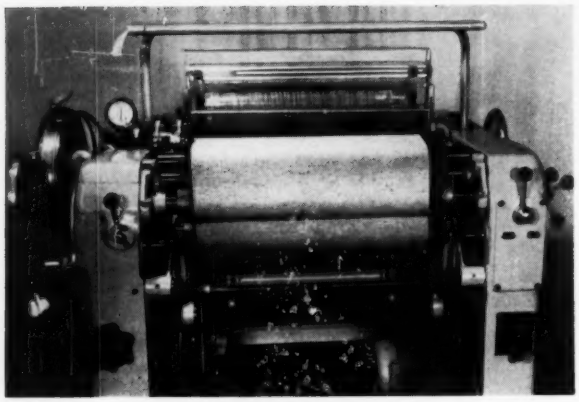


Figure 1

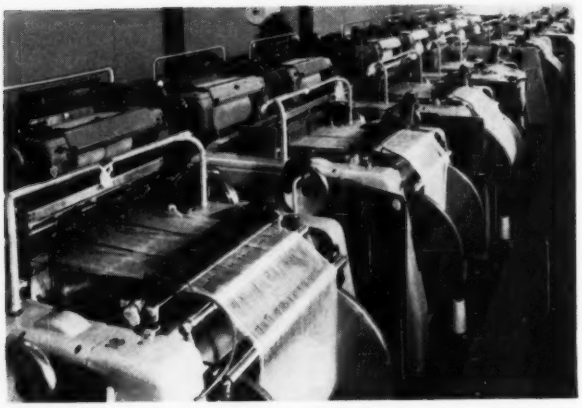


Figure 2

NEW HIGHSPEED LOOM

As we mentioned a few years ago, the matter of looms is somewhat out of the sphere of the textile colorists, but it must be admitted that any change in the method of weaving the fabrics he is called upon to dye, print or finish may have a profound effect on his ability to make a good job of his part of the total work on any fabric. So we take the liberty of adding to this review a note on the invention of a loom without a shuttle, the weft being introduced into the shed of the warp by means of jets of air.

Up to the present, we gather that this loom is only manufactured to handle goods 16″ wide at the rate of 800 picks a minute. Of course, to us, 16″ does not seem to be a very practical width, but there is no doubt that goods of double this width may possibly be made on such a loom in the near future. (See Figures 1 and 2.)

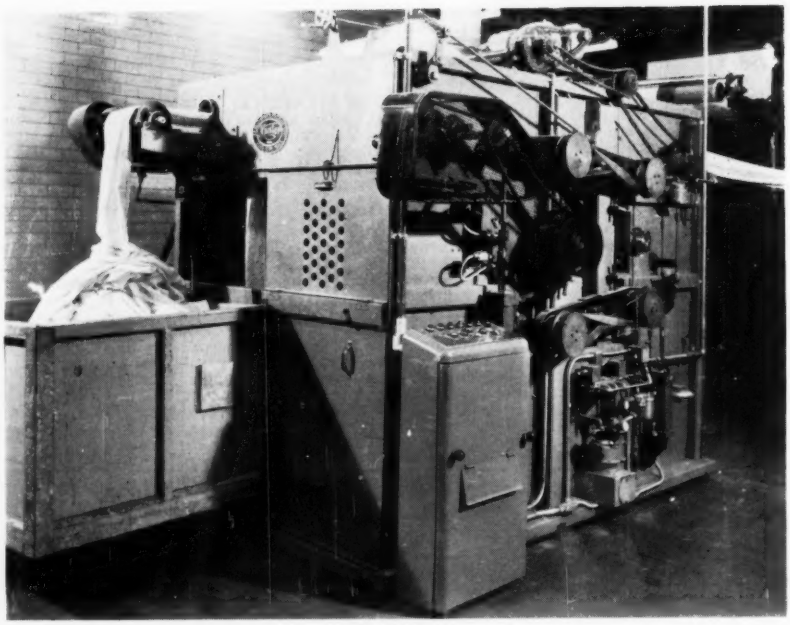


Figure 3
Continuous burr crusher

CARBONIZING

A new device for crushing the charred vegetable matter in goods that have been carbonized is proving very handy for the wool goods finisher. It is used directly after the goods leave the baking chamber.

A unique feature of the machine is that the pieces can be passed back and forth several times through the machine, giving a very effective crushing and complete removal of the waste matter.

One remarkable action of the machine is that the cycle is changed by the automatic response of a high-velocity current of air acting at the bottom of the scrays at each side of the machine, on a chamber at the opposite side of the scray, which contains a micro-switch. When the cloth has been pulled out of the scray by the nip-rollers of the crusher, the air stream impinges on the diaphragm of the micro-switch and closes it. This actuates a solenoid four-way valve, which reverses automatically the direction of the machine.

From the description of this apparatus, we surmise that it may be much cheaper than the regular type of crusher, that it takes up a very little floor space, and requires little power, all of which are interesting to a manufacturer, be he Scotch or Bourbon. (See Figure 3.)

Figure 4
Automatic open-width boiling machine

PREPARATION

There are certain fabrics which would suffer severely under boiling in the conventional kier and yet which can be more successfully boiled off under pressure than in the open width in the successive jig at normal atmospheric pressure.

Such cloths can be conveniently

(Continued on page 875)

Proceedings of the

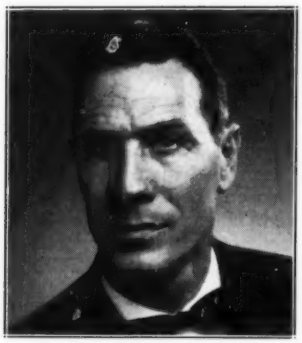
American Association of Textile Chemists and Colorists

Copyright, 1958, American Association of Textile Chemists and Colorists

December 1, 1958

HELMUS ELECTED 15th AATCC PRESIDENT

Parks, Anderson, Smith, Morrill Elected VPs



WELDON G HELMUS

W GEORGE PARKS

C T ANDERSON

WELDON G HELMUS, Fair Lawn Finishing Co, has been elected to serve AATCC as its 15th president, according to an announcement from AATCC Headquarters. Mr Helmus, who is presently vice president (Central Atlantic Region), defeated incumbent President George O Linberg, who was seeking a third term.

In the contest to fill the vice presidential vacancy in the Central Atlantic Region, C T Anderson, Ciba Co, Inc, defeated Bernard K Easton, Becco Chemical Div.

In the New England Region, W George Parks, Univ of Rhode Island, defeated J Edward Lynn, consultant, in a contest to fill the vice presidency in that area now held by Ernest R Kaswell, Fabric Research Laboratories, Inc, who is completing his third year in the post. Under the AATCC Constitution, which does not permit service in a post longer than three years, he was not a candidate for reelection.

H Gillespie Smith, American Cyanamid Co, and Elliott Morrill, incumbent vice presidents from the Southern and Western Regions respectively, were reelected without opposition.

H GILLESPIE SMITH

ELLIOTT MORRILL

COUNCIL REPORT

212th Meeting • October 30, 1958 • Chicago, Ill

COUNCIL, at its 212th meeting, held at the Conrad Hilton Hotel, Chicago, Ill, during the 37th National Convention, approved the idea of a "Service Award" to be presented annually, at the National Convention, to a Senior member, of at least twenty years continuous membership, who has contributed outstanding service in enabling the Association to attain the objectives for which it was founded.

The plan, as submitted by A Henry Gaede, chairman, Study Committee on Service Awards, calls for the selection to be the unanimous choice of a Committee consisting of one member from each of the four National Regions, to be selected by the Councilors of the respective Region; the president of the Association, ex officio; and the executive secretary serving as secretary of the Committee without vote. Each Regional member shall serve for four years, except that the four Regional members of the first Committee shall serve one, two, three, and four years respectively, the number of years each particular member is to serve to be determined by lot. The chairman of the Committee shall be a Senior Member, the senior member to be that elected member whose term first expires. No member shall be reelected for at least one year following completion of his term.

The Award shall be in the form of a suitably worded, framed, illuminated scroll.

Members of the Association will be requested to submit to the Committee, through the executive secretary, the names of those members deserving consideration for the Service Award.

The question of financing the Award has been referred to the Appropriations Committee for study.

* * *

Following the suggestion of Intersectional Contest Chairman Thomas J Gillick Jr, Council voted to empower the president to appoint a committee to study the future of the Intersectional Contest in detail. In his report, Mr Gillick stated that the research value of the Contest is approximately $25,000 to $30,000 a year and suggested to Council that it should be given more recognition. He advised that he was preparing a questionnaire, which is to be directed to Section chairmen, asking for their opinions on the Contest as it is now handled. He also suggested that the subjects of Contest papers should be in support of ECR and TCR objectives.

* * *

Following the report of 1958 Convention Chairman Elliott Morrill, vice president (Western Region), H Gillespie Smith, vice president (Southern Region), recommended more participation in the National Convention on the part of National Headquarters. Mr Morrill did not give an opinion, as he wished to reserve same until he had an opportunity to evaluate the results of the Chicago Convention, which had just commenced. Leonard Smith, Councilor representing the Washington Section, commented on the National Cotton Council's policy of yearly continuity of NCC Convention personnel, and suggested that NCC had found it to be most advantageous.

At this point, Ernest R Kaswell, vice president (New England Region) and chairman of the National Conventions Committee, stated that the Committee would meet during the Chicago meeting and take into consideration the points expressed. He and Past President J Robert Bonnar called attention to the importance of the concept of volunteer participation and pointed out some of the reasons for allowing Sections or Regions to assume responsibility for Conventions where they desire to do so.

As chairman of the Conventions Committee, Mr Kaswell nominated Leonard Smith for the post of 1959 Convention chairman to replace George P Fulton, who asked to be relieved of the assignment. Council voted unanimous approval.

* * *

For the Committee on Membership and Local Sections, Weldon G Helmus, vice president (Central Atlantic Region), announced that 36 new members had been elected to AATCC, bringing the net gain in membership since May 1, 1958 to 257.

* * *

For the Committee on Constitution and Bylaws, Chairman William R Holst, under the provisions of Article VIII of the Constitution, submitted for Council approval a proposal for an amendment to Article VI covering methods for the nomination and election of officers. Council voiced approval of the proposal, which will be published in the *Proceedings* and submitted to vote of the entire Senior membership.

* * *

The next meeting of the Council will be held at 9:30 AM, January 30, 1959 at the Hotel McAlpin, New York, NY. The 214th meeting is scheduled for May 30 at the Mount Royal Hotel, Montreal, Canada.

CORRECTION

On page 5 of the *1958 Technical Manual*, Zeno W Wicks Jr was listed in error in the "In Memoriam" section. His name should be deleted from this listing.

1st Prize Winner
1958 Intersectional Contest———

THE EFFECT OF THERMAL TREATMENTS ON THE DYEABILITY OF THERMOPLASTIC YARNS*

COMMITTEE

F FORTESS, chairman
Celanese Corp of America
N A TRUSLOW,
speaker & project chairman
U S Rubber Co
L B ARNOLD
Vikon Chemical Co
P A COOK
Celanese Corp of America
L P DIXON
American Enka Corp
J E GREER
Burlington Industries, Inc
J V KILLHEFFER
E I duPont de Nemours & Co, Inc
E A MURRAY
North Carolina State College
H L REED
American Enka Corp
G R TURNER
E I duPont de Nemours & Co, Inc

Acrylic, polyamide 6, polyamide 66, polyester and triacetate fibers were given thermal treatments prior to dyeing. These treatments involved variations in temperature, tension, and moisture. It was found that changes were produced in the molecular orientation and crystallinity which caused changes in the fiber dyeability. It was concluded that variations in commercial thermal treatments prior to dyeing are a major cause of shade variations.

INTRODUCTION

DURING the past decade, major advances have been made in the dyeing of synthetic fibers. Nevertheless, problems of uniformity continue to be a source of trouble. In fact, a number of textile manufacturers have stated that uniformity of shade is their most troublesome quality problem in the dyeing of synthetic fibers. The non-uniformity shows up as warp streaks, filling bands, barré effects, face-to-back shading, side-to-center variations, and variation from piece to piece. These variations give trouble in both filament and spun yarns for both yarn dyeing and piece dyeing. They are encountered in knitted and woven goods, in square woven and in smooth-faced goods like satins, and also in pile fabrics, such as carpets and fleeces.

In this investigation, attention was directed only to those operations which involve the use of heat prior to dyeing. The use of such heat treatments on the synthetic fibers has greatly expanded in recent years. In addition to well-known operations involving heat, such as the sizing of warp yarns, the drying of scoured goods, and singeing, it is not uncommon to set the twist in yarns before weaving, to run goods through hot equipment in order to stabilize fabrics or produce various types of textured and stretch yarns, or to block garments, such as sweaters and hosiery. Such treatments are particularly prevalent on the synthetic fibers which have thermoplastic properties. Included in this category are the polyamide, the polyester, the cellulose ester, the acrylic, and the polyvinyl fibers.

The objective of this investigation was to determine if heat treatments prior to dyeing could be a major cause of the variations encountered in uniformity of shade. Since the problem is so widespread, basic studies concerning it should have immediate practical value. New information involving this phenomenon could also have theoretical implications that would shed light on fiber structure and dyeing mechanisms.

*Presented by N A Truslow on October 31st at the Conrad Hilton Hotel, Chicago, Ill. during the 37th National Convention.

THEORETICAL CONCEPTS

Variation in dyeing of any particular fiber is caused by several factors: chemical changes, structural changes, and physical changes *(3,4)*.

Chemical changes, such as a difference in the number of amine end-groups in polyamides, can affect the number of dye sites and molecular weight. It has been shown that the number of amine end-groups can have a major effect on the dyeing properties of polyamides; however, this appears to be more a problem in the production of the fibers than in the heat treatment of the fibers at normal temperatures *(5,20)*. At temperatures which are sufficiently high to cause chemical degradation, as evidenced by yellowing and loss of strength, there is a marked change in the dyeing properties of polyamide fibers *(6)*. Chemical changes resulting from heat treatments at moderate temperatures in fibers other than nylon have not been reported.

Structural changes, such as fiber diameter, shape of cross section, and twist, can affect dyeing as a result of variations in the penetration of the dye liquor into the fabric structure and penetration of the dye into the fiber. Such structural changes can be caused by heat treatments, resulting in a more compact fabric, which prevents easy penetration of the dye liquor. With extremes in heat treatment, the fibers can be drawn to finer diameters so that the dye would have a shorter distance to travel to completely penetrate the fiber. Also, heat treatments can cause changes in crimp. These produce changes in fabric reflectance which often look like a difference in dyeing. However, examination of the type of dye variations encountered commercially reveals that this source of variation is under control and so experiments were designed to exclude any such structural changes.

Physical changes, such as molecular orientation and crystallinity, are known to have a pronounced effect on the dyeing properties of fibers *(3)*. The dyes are absorbed mainly in the amorphous or noncrystalline regions of a polymer, and therefore, the degree of crystallinity can affect the total amount of dye that can be absorbed *(7)*. The degree of orientation affects the dyeing properties and is correlated with the rate at which the dye is diffused into the fiber *(8)*. This change in rate is considered to be connected with a change in the arrangement and dimensions of the amorphous regions. The more highly oriented materials probably have smaller amorphous areas or greater packing of the micelles *(9)*.

In the past, it has been realized generally that variations in thermal treatments prior to dyeing could cause a variation in shade when high temperatures were used *(1)*. This is presumed to be due primarily to physical changes in the molecular orientation and crystallinity *(10,11)*.

The fiber producers have recognized the importance of uniform heat treatments to obtain subsequent uniform dyeing of the polyamide and polyester fibers *(2)*. Heating so as to cause overdrying has also been reported to have an effect on dyeing *(21)*. However, the work previously reported does not cover a variety of fibers, does not indicate the degree of variation to be expected, and does not attempt to correlate the dyeing differences with the fiber properties that have been changed during commercial thermal treatments. Therefore, this further work is needed.

EXPERIMENTAL PROCEDURE

Exploratory work on this project revealed that a number of factors could cause a variation in the dyeing properties of the fibers. In addition to temperature, it was found that moisture, tension, and time of treatment were important variables. Also, it was found that all of the fibers did not react in the same manner to the treatments. Being faced with such a variety of different factors which could cause a change in dyeability, it was decided that the most fruitful method of attack on this problem would be to treat a variety of chemically different fibers and to vary only the temperature of the treatment. Then an investigation was made to determine the degree of correlation between the depth of dyeing and the fiber properties. Less extensive tests were conducted on the effect of tension and moisture.

A novel feature used in these experiments is the method of dyeing. In each series of tests, all of the variations for each fiber were dyed together in the same dyebath so that the fibers were competing for a limited quantity of dyestuff. This technique was selected because it is the same condition that is encountered in commercial dyeing, and therefore, provides a clearer measure of the effect of changes than if the materials were dyed separately. Prior work in this field has been done with separate dyeings for each condition. Another uncommon technique used was the measurement of dyeability. This was determined by dissolving the dyed fiber and using a spectrophotometer to measure the amount of dye that had been absorbed. This method gives a quantitative result that is independent of the fabric and fiber geometry. The above critical methods were necessary because an attempt was made to correlate the dyeability with the physical properties of the fibers.

TABLE I

	Color A	Color B
Acrylic Fiber		
Dye	Celanthrene Brill Blue FFS	Sevron Brill Red 4G
Concentration	0.5%	0.5%
Temperature	210°F	210°F
Assistants	0.25% Duponol RA	0.5% Alkanol HCS 0.5% sodium acetate 1.0% acetic acid
Post Scour	Five min at 110°F (pure water)	Five min at 110°F (pure water)
Polyamide Fibers		
Dye	Acetamine Scarlet B	Capracyl Red B
Concentration	0.5%	0.5%
Temperature	190°F	190°F
Assistants	0.25% Duponol RA	0.25% Duponol RA
Post Scour	20 min at 180°F with 0.5% Duponol RA	20 min at 180°F with 0.5% Duponol RA
Polyester Fiber		
Dye	Latyl Blue RL	Latyl Blue 2G
Concentration	0.75%	0.75%
Temperature	210°F	210°F
Assistants	4% Avitone T 1% Duponol RA 16% Dowicide A pH adjusted to 5.0 with acetic acid	4% Avitone T 1% Duponol RA 16% Dowicide A pH adjusted to 5.0 with acetic acid
Post scour	20 min at 180°F with 0.5% Duponol RA	20 min at 180°F with 0.5% Duponol RA
Triacetate Fiber		
Dye	Interchem Blue GSF	Eastone Fast Red NGLF
Concentration	0.75%	0.50%
Assistants	0.25% Duponol RA Adjust pH to 6.5 with diammonium phosphate	0.25% Duponol RA
Temperature	203°F	203°F
Post scour	20 min at 140°F with 0.5% Duponol RA	20 min at 140°F with 0.5% Duponol RA

TABLE II

Name	*Mfr*	*Part I New CI*	*Part II New CI*	*Type*
Celanthrene Brill Blue FFS	DuPont	Disperse Blue 3	61505	Disperse
Sevron Brill Red 4G	DuPont	Basic Red 14	—	Basic
Acetamine Scarlet B	DuPont	Disperse Red 1	11110	Disperse
Capracyl Red B	DuPont	Acid Red 182	—	Neutral (metallized)
Latyl Blue RL	DuPont	—	—	Disperse
Latyl Blue 2G	DuPont	—	—	Disperse
Interchem Blue GSF	Interchemical	—	—	Disperse
Fastusol Blue LBRRA Extra	General	Direct Blue 71	34140	Direct
Erstone Fast Red NGLF	Eastman	Disperse Red 35	—	Disperse
Duponol RA	DuPont	Fortified ether alcohol sulfate		
Alkanol HCS	DuPont	Nonionic surfactant		
Avitone T	DuPont	Sodium hydrocarbon sulfonate		
Dowicide A	Dow	Tetra-hydrate of sodium o-phenyl phenate		

MATERIALS———The fibers selected were all thermoplastic synthetic filaments that represent various chemical types that have been commercially accepted. They were all prepared with approximately 2.5 turns per inch.

The fibers and yarn constructions were:

Acrylic—300 den, 120 filament special L I Orlon (Du Pont)

Polyamide 6—400 den, 68 filament type 9199 Nylenka (Enka)

Polyamide 66-400 den, 68 filament type 100 nylon (Du Pont)

Polyester—250 den, 50 filament, type 55 Dacron (Du Pont)

Triacetate—300 den, 80 filament, Lot 1717 Arnel (Celanese)

HEAT - TREATMENT CONDITIONS———These fibers were tensioned at 0.3 grams per denier and exposed to the desired temperature for 60 seconds. This was done by continuously pulling a single end of the yarn at a constant speed through a hot-air oven, the temperature of which was kept to the desired level within ±0.5°F. In the case of the acrylic and triacetate fibers, it was found necessary to reduce the tension to 0.1 grams per denier at temperatures of 300°F and above.

The temperatures used during dry heat treatment were 100 (Control), 180, 240, 300, 360, and 400°F. These temperatures cover the range from that used for low-temperature slashing, up to the maximum normally encountered in heatsetting operations.

A second set of samples was prepared in which the filament was knit in a loose stitch tubing before the thermal treatment. For this series, only the polyamide 6 and the triacetate fibers were used. After knitting, pieces of tubing of each fiber were treated at 250°F for 15 minutes under the following different conditions:

1—Control—no treatment
2—Relaxed—in dry heat

TABLE III
Samples treated before knitting
Effect of dry heat

Temperature °F	% Dye A on fiber	% Dye B on fiber	Intrinsic visc	X-Ray orientation	X-Ray crystallinity
Acrylic Fiber					
Control	0.215	0.94	1.36	medium	medium
180	0.215	—	1.36	medium	medium
240	0.215	0.96	1.36	medium	medium
300	0.200	0.94	1.35	medium	medium
360	0.190	0.84	1.38	medium	medium
400	0.300	1.25	1.34	high	medium
		A = Celanthrene Brill Blue FFS			
		B = Sevron Brill Red 4G			
Polyamide 6					
Control	1.09	1.08	1.22	very high	high
180	1.12	0.97	1.24	very high	high
240	1.10	0.82	1.22	very high	high
300	1.07	0.74	1.25	very high	high
360	0.94	0.70	1.24	extreme	high
400	0.79	0.63	1.11	extreme	very high
		A = Acetamine Scarlet B			
		B = Capracyl Red B			
Polyamide 66					
Control	0.75	0.42	1.01	very high	very high
180	0.79	0.41	1.01	very high	very high
240	0.80	0.42	1.03	very high	very high
300	0.77	0.365	1.03	very high	very high
360	0.65	0.275	1.01	extreme	very high
400	0.57	0.215	0.96	extreme	very high
		A = Acetamine Scarlet B			
		B = Capracyl Red B			
Polyester					
Control	1.46	0.87	1.24	high	high
180	1.38	0.86	1.27	high	high
240	—	0.75	1.26	high	high
300	0.84	0.50	1.24	high	very high
360	0.45	0.36	1.29	very high	very high
400	0.42	0.36	1.21	very high	extreme
		A = Latyl Blue RL			
		B = Latyl Blue 2G			
Triacetate					
Control	0.50	0.46	1.16	low	low
180	0.53	0.50	1.17	low	low
240	0.54	0.50	1.11	low	low
300	0.52	0.50	1.16	medium	low
360	0.45	0.40	1.14	medium	low
400	0.26	0.20	1.06	high	very high
		A = Interchem Blue GSF			
		B = Eastone Fast Red NGLF			

3—Relaxed—in a saturated steam atmosphere

4—Tensioned—in dry heat

5—Tensioned—in a saturated steam atmosphere.

The tension on these samples was obtained by clamping them in a frame so that the goods were taut. The amount of tension was roughly equivalent to that imposed by a commercial tenter and was estimated to be 0.2 grams per denier. For dry heat, the exposure was made in a laboratory oven. For the steam heat, the exposure was made in an autoclave which was evacuated before saturated steam was introduced.

DYEING PROCEDURES——Following the heat treatment, the samples of each fiber were knitted into tubing with the various temperature treatments knitted in bands side by side in order of increasing temperature of treatment. Each knitted tube, containing six temperature bands, was dyed for one hour with two dyes, using automatic laboratory equipment and normal commercial procedures.

This technique was expected to accentuate any differences between the treatments since the more readily dyed band, eg, the one heated at a lower temperature, could absorb the dye, and the time of dyeing would not permit a true equilibrium to be reached. However, the nonuniformities from band to band were expected to reflect closely the differences that are encountered in commercial practice on a fabric containing fiber differences due to fluctuations in the heat treatment. The dyes were selected from types that are in frequent commercial use for the specific fiber.

Before dyeing, the samples were scoured at 160°F for 30 minutes with 1% TSPP, and 1% of a modified alkyl sulfate surfactant. In the case of the acrylic fiber to be dyed with a basic dye, the modified alkyl sulfate was replaced with a high-temperature soluble nonionic surfactant. Following this scour, all samples were given two rinses at 120°F for five minutes in distilled water. These scouring treatments were used because they simulate industrial practices and because they will remove fiber finishes which might affect the dyeing.

A liquid ratio of 40:1 was used for these dyeings. The dyeings were started at room temperature and raised to dyeing temperature over a 20-minute period, and then dyed at that temperature for a period of one hour. The quantities of materials used are all based on the weight of goods. This is shown in Table I.

The samples knitted before treatment to determine the effects of tension and moisture were scoured and dyed in a manner similar to that used for the samples knitted after treatment. However, in the case of the polyamide samples knitted before treatment, the dyebath consisted of 0.1% Fastusol Blue LBRRA Extra (Direct Blue 71, *CI* 34140) and 3% of 30% acetic acid. For the triacetate samples, the dyebath contained 0.4% Eastone Fast Red NGLF (Disperse Red 35).

In the above formulas, the commercial names of the chemicals are used. They are identified in Table II.

TESTING PROCEDURES——After dyeing, the amount of dye absorbed by the fiber was determined by use of a spectrophotometer. This technique is very accurate and it eliminates any variation by dye penetration or surface luster which would affect visual comparisons. The results are reproducible to ±0.02. The technique is described in Appendix A.

Chemical changes which cause a change in the molecular weight of the polymer can be detected by measuring the viscosity of a dilute solution of the fiber. This is a sensitive tool for determining degradation and polymerization *(12)*. These results are accurate within ±0.06. The intrinsic viscosity for these fibers at each treating temperature was determined in dimethylformamide for the acrylic fibers, in formic acid for the polyamide fibers, in chloroform for the triacetate fibers, and in orthochlorophenol for the polyester fiber.

Changes in the fiber density usually denote a change in the fiber crystallinity with the more dense fibers being more highly crystalline. The fiber densities were determined by suspending the fibers in a gradient tube filled with a mixture of carbon tetrachloride and heptane so that the fiber will neither sink nor float when immersed in the liquid mixture of the same density as the fiber. The results are reproducible within ±0.002.

The crystallinity was checked by means of X-Ray diffraction patterns noting the number, the diameter, and the relative intensity of the diffraction rings. The molecular orientation was determined from the same X-Ray

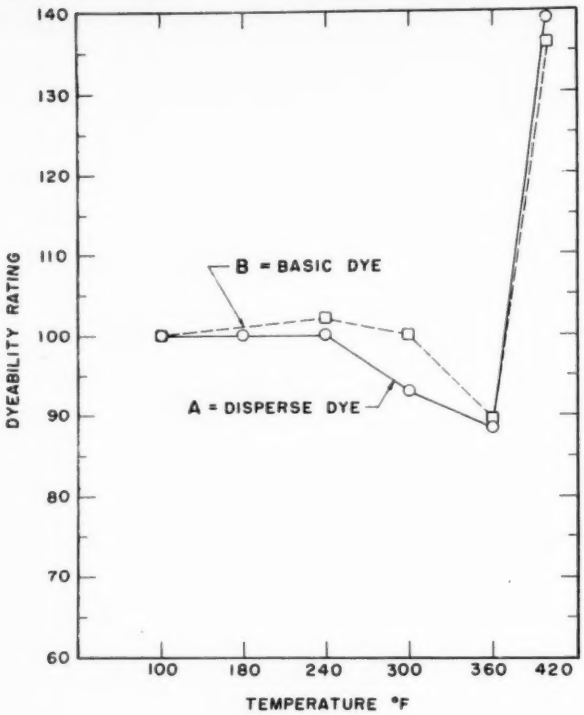


Figure 1
Acrylic

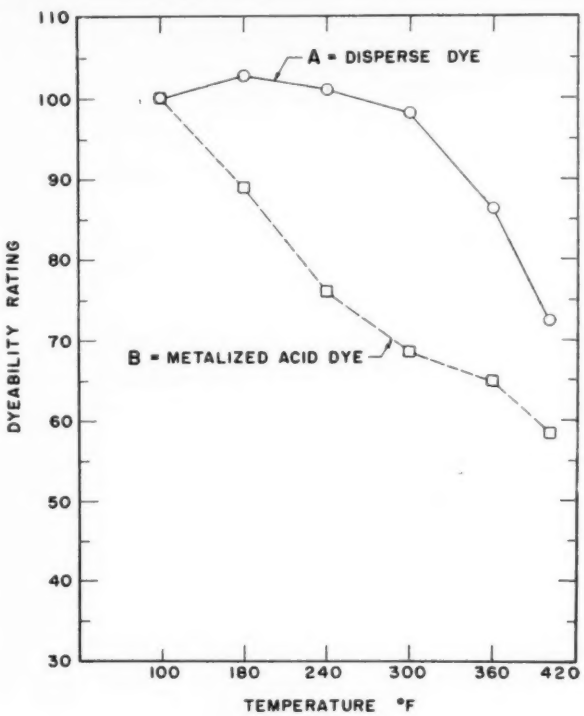


Figure 2
Polyamide 6

diffraction patterns by examining the angle of the arcs, the width or diffuseness of each ring, and the general scattering (*13*). From these patterns the fibers have been rated for both orientation and crystallinity in five classes as "Low, Medium, High, Very High, and Extreme."

The results obtained on the yarn treated with dry heat at various temperatures are shown in Table III. The results obtained on treating the knitted fabric with variations in tension and moisture are shown in Table IV.

DISCUSSION OF EXPERIMENTAL RESULTS

The data given in Tables III and IV plainly reveal that the various heat treatments can cause a major change in the dyeing properties of all of the fibers tested. However, the differences in behavior are masked by the differences in the total amount of dye absorbed. In order to put all of the data on a comparable basis, the amount of dye absorbed in the untreated control can arbitrarily be assigned a value of 100%. Using that quantity as a basis, the other amounts of dye can be given a "percentage rating." This has been done and the results are plotted in Figures 1-5. In addition, for the polyester fiber, a similar rating has been calculated for the noncrystalline or amorphous content of the fiber. The values of this calculation are shown in Table V and illustrated in Figure 6.

This percentage rating is not an absolute measure of the comparative dyeability of the fibers because the samples were dyed under competitive

TABLE IV
Samples treated after knitting
Effect of moisture and tension

Treatment	*% Dye on fiber*	*Fiber density*	*X-Ray orientation*	*X-Ray crystallinity*
Triacetate Fiber				
None-Control	0.34	1.309	low	low
Dry heat relax	0.33	1.305	low	low
Dry heat tension	0.34	1.301	low	low
Steam relax	0.17	1.302	low	very high
Steam tension	0.18	1.308	low	very high
Polyamide 6 Fiber				
None-Control	0.11	1.145	very high (22.5)*	
Dry heat relax	0.09	1.149	high (25.5)	
Dry heat tension	0.07	1.146	high (24.0)	
Steam relax	0.42	1.156	low (30.5)	
Steam tension	0.31	1.156	medium (28.0)	

*The numbers in parentheses refer to the angle of the arc width in the X-Ray diagram. The larger this angle, the lower is the molecular orientation.

TABLE V
Polyester fiber treated with tension and dry heat

	Noncrystalline			*Dye B Absorption*	
Temperature °F	*Density gms/cc*	*%*	*Rating*	*%*	*Rating*
Control	1.382	51	100	0.87	100
180	1.388	48	94	0.86	99
240	1.389	47	92	0.75	86
300	1.399	41	81	0.50	58
360	1.398	41	81	0.36	42
400	1.420	27	53	0.36	42

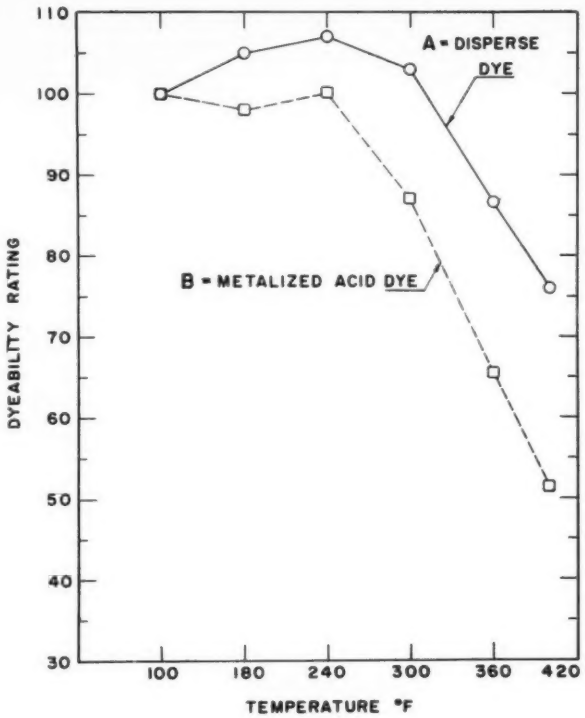


Figure 3
Polyamide 66

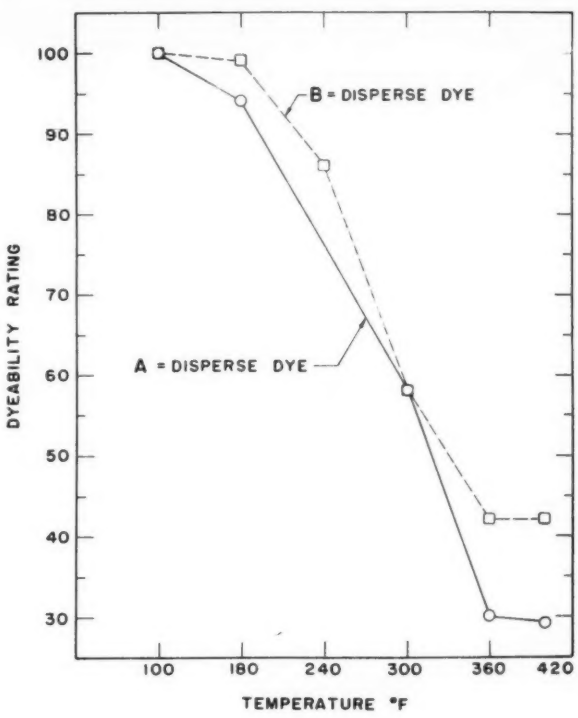


Figure 4
Polyester

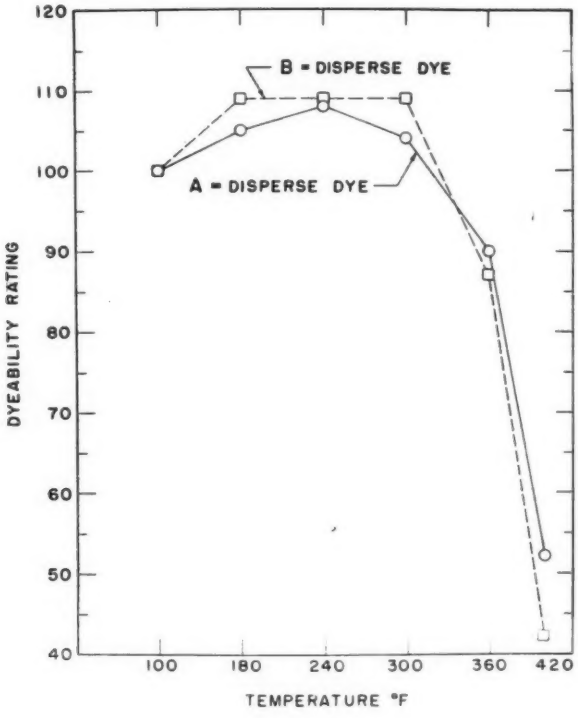


Figure 5
Triacetate

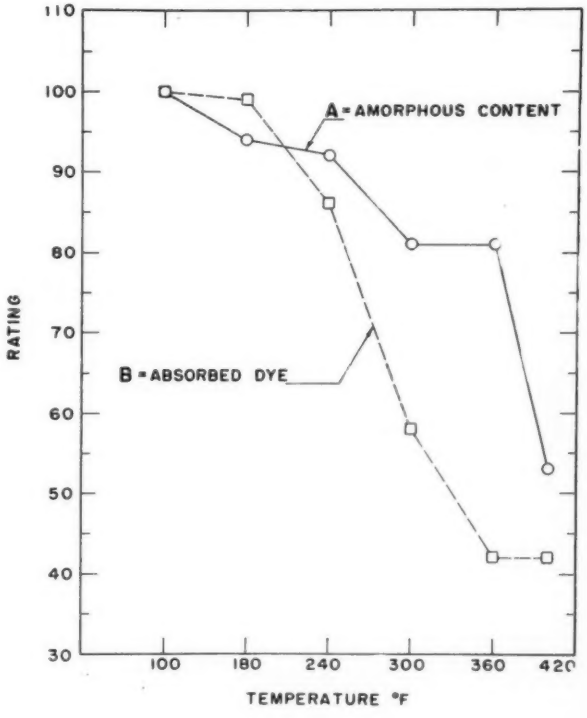


Figure 6
Polyester

and non-equilibrium conditions. However, these curves do reveal sharp differences as well as similarities between the various fibers, dyes, and treatments.

In any project of this nature where a number of different steps are taken, various errors due to non-uniform treatment can be introduced so that the reliability of the results must be closely examined. Referring first to the data on dye absorption, it is noticed that uniform curves can be plotted through the points obtained. Also, it is seen that, with different dyestuffs used on the same fiber, the curves obtained are quite similar. These two observations strongly indicate that the results are dependable. The spectrophotometer has been found to give very reliable results and can detect a 0.5% difference in color between similar samples *(14)*. Other variables, such as temperature and time of treatment, were also very closely controlled. However, minor variations may have occurred in the tension control and in dye streaks at folds of the fabric. This could account for the fact that perfectly smooth curves were not obtained. However, it is believed that differences of more than 2% are real and are caused by the heat treatment.

The variations that are visually noticed on these samples are in good agreement with the numerical results obtained. The variations also are similar to the shading problems encountered in commercial dyeing.

EFFECT OF DRY HEAT——Examination of Figures 1-4 reveals that all of the fibers show similarities in behavior with a relatively slight change in dyeability when treated at low temperatures. At elevated temperatures, all of the fibers show a more rapid reduction in dyeability. Another similarity noted in these curves is that the different types of dyes behave roughly the same so that the change in the heat treatment causes a similar change in the dyeability. It is indicated that a single underlying cause is operating, irrespective of the type of fiber or type of dyestuff and therefore a basic phenomenon is involved.

Differences as well as similarities were noted between the fibers. For instance, the dyeability of the acrylic fiber, as shown in Figure 1, is less affected by the heat treatment than are the other fibers. Until temperatures above 240°F were used, the percentage rating on the acrylic fiber did not change. (The 2% increase found at 240°F for the Type B dye is not statistically significant). From 240°F to 360°F the percentage rating decreased 10%. However, between 360° F and 400°F there was a very rapid increase in dyeability and this behavior is different from that encountered in the other fibers. This difference is explained on the basis of thermal degradation of the acrylic fiber whereas the other fibers were not degraded. Evidence of this degradation was apparent from the yellowing of the sample during treatment, but unexpectedly was not revealed in a change in the intrinsic viscosity or the tenacity of the yarn. Previous investigators have revealed that the polyamide fibers show a similar increase in dyeability when they are thermally degraded *(6)*.

The dyeability of the polyamide 6 fiber, as shown in Figure 2, reveals that, with certain dyes, it is more sensitive to low temperature treatments than the other fibers. With tension as used in this experiment and heated to only 180°F, the dyeability with metallized acid dyes dropped 11%. However, when a disperse dye was used, no significant difference in dyeability was detected until temperatures above 300°F were reached. This difference in behavior between the two types of dyes is more pronounced with the polyamide 6 fiber than in the other fibers investigated.

The polyamide 66 fiber revealed an unusual phenomenon when dyed with the disperse dye: there is an initial increase in dyeability with disperse dyes when the fiber is heated with tension. This phenomenon was also encountered in the triacetate fiber. Although not statistically significant, an increase in dyeability is also suggested by the results obtained on the acrylic and the polyamide 6 fiber. The data of previous investigators have shown this effect on polyamide 66 but they have neglected to comment on it *(6)*. The change in dyeability is small at temperatures up to 300°F, but there is a rapid decrease in dyeability above this temperature.

The polyester fiber shows a small but significant decrease in dyeability even with temperatures as low as 180°F. This was unexpected since this is appreciably lower than the 200°F temperature that the fiber manufacturer considers critical *(2)*. From 180°F to 360°F there is a very rapid decrease in dyeability so that, at the higher temperature, only one-third as much dye was absorbed as at the lower temperature. From 360°F to 420°F the dyeability was essentially uniform. This effect is similar to that reported by Imperial Chemical Industries, Ltd, but in these tests we find a much greater change and the change occurs at a lower temperature *(18)*. Differences in tension, fiber, and method of dyeing could account for lack of complete agreement between the ICI results and these results.

The triacetate fiber, as shown in Figure 5, reveals that dry heat up to 300°F causes a small but significant increase in dyeability with both dyes. Such an increase in dyeability after heat treatment has not been reported heretofore. At temperatures from 300°F to 400°F there is a rapid decrease in dyeability so that at 400°F only half as much dye is absorbed as at 300°F.

EFFECT OF TENSION——The data shown in Table IV reveal that, with steam or dry heat on the triacetate fiber, no statistically significant difference in dyeability could be detected between the treatment with tension or relaxed. However, on the polyamide 6 fiber, the tension caused a decrease in dyeability of about 25%.

EFFECT OF MOISTURE——Moisture in combination with a thermal treatment can produce very marked changes in the dyeability of these thermoplastic fibers. With the triacetate fibers, the dyeability is reduced to approximately half the value obtained with dry heat. In contrast, the polyamide 6 fiber is increased to more than four times the value obtained with dry heat. Exploratory work on acrylic and polyamide 66 reveals that a marked increase in dyeability is also obtained with those fibers when they are given a thermal treatment in saturated steam. Exploratory work on the polyester fiber reveals that, with steam, it behaves like the triacetate fiber and a marked reduction in dyeability is obtained.

THEORETICAL CONSIDERATIONS

One of the observations that must be explained is that some dyes appear to be more sensitive to the thermal treatment than do the other dyes. It is known that the rate of dyeing is dependent on the size of the dye molecule *(15)*. The primary effect from thermal treatments is probably to change the rate of dyeing by changing the steric hindrance to the dye molecules *(14)*. Therefore, it can be deduced that, if the dyeability of the fiber were reduced, the effect would be more pronounced with the larger dye molecules. Thus the pores

cr passageways to the interior of the fiber are reduced by the dry heat treatments, and this is believed to hinder the passage of the large dye molecules more than the small dye molecules. In Table VI are shown the relative sizes of the dye molecules used in these tests. The above hypothesis appears confirmed if the change in dyeability is checked against this table. The evidence is particularly clear in the case of the polyamide fibers where the small molecule of the disperse dye gives a more level dyeing than the large molecule of the metallized acid dye. Schematic diagrams which illustrate the effect of steric hindrance are shown in Appendix B. There is a possibility that the small disperse dye molecules are primarily sensitive to the amount of amorphous material present in the fiber and so the quantity of the disperse dye which is absorbed could be a measure of the fiber crystallinity. In contrast to this, the larger dye molecules are probably sensitive to both the orientation and the crystallinity. It is conceivable that this observation could be used as the basis for a technique to check quickly on changes in fiber orientation and crystallinity.

For a satisfactory understanding of this problem, it is also necessary to determine what has occurred within the fiber to cause such large changes in dyeability. As previously discussed, the variation might be due to chemical changes, structural changes, physical changes, or a combination of these. Except for the case of the acrylic fiber exposed to the maximum temperature, there appears to be no chemical change in the fibers. This conclusion is based on the lack of any color change during treating, lack of any appreciable change in intrinsic viscosity and lack of change when tests were made for the amine groups of the nylon. The lack of any chemical change, particularly for the polyamide fibers, is in contrast to what has been reported by other investigators *(20)*.

Because of the procedures used in these experiments, and judging from negligible changes in denier and fiber shape, it is concluded that structural changes in the fiber could not account for the variations observed in dyeability.

In contrast to the absence of changes encountered in chemical composition and structural factors, there is clear evidence that physical changes have occurred in the molecular arrangements. Included in this evidence are the X-Ray diagrams, the density measurements, and observations on fabric shrinkage. Therefore, it can be concluded that the changes in dyeability are attributed to the changes in the molecular arrangements.

TABLE VI

Relative size of dye molecules arranged in increasing size

Based on molecular weight

Celanthrene Brill Blue FFS
Latyl Blue RL
Interchem Blue GSF
Acetamine Scarlet B
Eastone Fast Red NGLF
Latyl Blue 2G
Sevron Brill Red 4G

Based on molecular cross section

Acetamine Scarlet B
Eastone Fast Red NGLF
Sevron Brill Red 4G
Latyl Blue 2G
Latyl Blue RL
Interchem Blue GSF
Celanthrene Brill Blue FFS

TABLE VII

	High crystalline fiber	*Low crystalline fiber*
% Crystalline	65	35
% Amorphous	35	65
% CCl_4 Absorbed	1.06	1.50
Crystallite density	1.330	1.330
Amorphous density	1.240	1.240
CCl_4 density	1.595	1.595
Wt of crystallite	0.851	0.469
Wt of amorphous	0.434	0.806
Actual density of fiber	1.285 (most dense)	1.275 (least dense)
Wt of CCl_4	0.017	0.024
Apparent density of fiber	1.302 (least dense)	1.309 (most dense)

It is interesting to examine the data to determine more precisely what changes have occurred in the molecular arrangements. As described in the introduction, these changes have previously been attributed to 1) crystallinity which affects total dye absorption, and 2) orientation which affects the rate of dyeing. In this project, the X-Ray diagrams indicate that a decrease in crystallinity was not produced by any of the treatments. An increase in crystallinity could be detected when the fibers were given a dry heat treatment at high temperatures, but in saturated steam the increase in crystallinity occurred at lower temperatures.

Crystallinity is also related to fiber density. The data in Tables IV and V indicate that a change in crystallinity has occurred and this is correlated with a change in dyeability.

A paradox that must be explained is the case of the triacetate fiber reported in Table IV where there was a reduction in density although the crystallinity as determined from the X-Ray diagram increased and the dyeability decreased. This paradox is explained by the erroneous results obtained on the fiber density due to absorption of the carbon tetrachloride within the amorphous regions of the fiber *(19)*. Because of the high density of the carbon tetrachloride, such an absorption tends to increase the apparent density of the fiber. Table VII covers an example which can be used to illustrate this.

Although these figures are not based on exact data, they are sufficiently accurate to indicate that a difference of less than 0.5% in the amount of carbon tetrachloride that was absorbed could account for the observed discrepancy in density. It can be seen that the absorbance of this small amount caused a reversal in the apparent densities of the fibers.

In the case of the polyamide 6 fiber treated in steam, an increase in density was also observed with an increase in dyeability. It has not been realized heretofore that carbon tetrachloride was also preferentially absorbed by the amorphous areas of these polyamide fibers. However, it is now believed that such is the case. Then the density results would not conflict with the X-Ray diagram results and the paradox is explained.

Density measurements were also made for the polyester fiber, as shown in Table V and which has been plotted in Figure 6. Here again the thermal treatment is seen to cause an increase in crystallinity and a decrease in dyeability. However, if there were a direct cause-and-effect relationship between amorphous content and dyeability, Figure 6 should show two parallel curves. Instead, we notice that, between 360°F and 400°F, there has been a major increase in density but the dyeability has not changed. Also, between 300°F and 360°F very little change occurred in density but a large drop in dyeability occurred. This indicates that the changes in crystallinity of the fibers can explain only part of the changes in dyeability.

It is noted in these tests that the triacetate fiber and the polyester fiber have a sharper reduction in dyeability than do the polyamide or the acrylic fibers. Also, when the triacetate or the polyester fiber are steamed at 250°F, they decrease in dyeability whereas the polyamide and acrylic fiber increase in dyeability. The differences in behavior of these two groups is believed due to the differences in crystallizing, with the triacetate and the polyester fibers easily forming crystallites. This crystallization occurs more readily because the

anhydroglucose rings (in the triacetate fiber) and the benzene rings in the polyester fiber) produce relatively rigid molecules (*17*).

In summarizing the crystallinity effects, it is shown that thermal treatments can cause changes in crystallinity. Also, there appears to be a strong relationship between crystallinity and dyeability with an increase in crystallinity producing a decrease in dyeability. However, changes in crystallinity cannot account for all of the changes that are observed in the dyeability of thermally treated thermoplastic fibers. The data also indicate that greater changes in crystallinity occur in the presence of moisture than in dry heat.

Orientation of the molecules can be revealed by the X-Ray diagrams and these diagrams show that with dry heat at 360°F and above there was an increase in orientation. Also, it was shown for the polyamide 6 fiber that dry heat at 250°F caused a slight decrease in orientation. With steam at 250°F there was a larger decrease in orientation for the polyamide 6 fiber. In every case, a lower degree of orientation resulted in an increase in dyeability.

The data for the polyamide 66 and the triacetate fiber show a surprising increase in dyeability when these materials were treated with tension and dry heat at 240°F. This temperature is believed to be lower than that which would have caused changes in crystallinity. However, it probably relaxed the fibers so that orientation was reduced and this caused the slight increase in dyeability. The tensions which were used were apparently not high enough to prevent this. Another possible explanation of this phenomenon is that the heat treatment broke weak hydrogen bonds between the molecules in the amorphous area and thereby allowed easier movement of those molecules. This in turn permitted the dye molecules to penetrate those amorphous areas more easily.

In summarizing the orientation effects, it is shown that thermal treatments can cause changes in orientation. Also, it is shown that in every case where a change in orientation can be detected, there is a change in dyeability and an increase in orientation leads to a reduction in dyeability.

The theoretical aspects of thermal treatments on the dyeability of thermoplastic fibers can be summed up as follows. Variations in dyeability as a result of thermal treatment can be explained as being entirely due to physical changes in the molecular arrangement of the fiber. These physical changes are largely and perhaps entirely due to changes in molecular orientation and crystallinity. The variables of temperature, tension, moisture, and duration of treatment are logically explained by this theory. Differences in the behavior of various dyes and various fibers can also be satisfactorily explained within the framework of a single theory of molecular structure.

TABLE VIII

Temperature variation which can be tolerated before a variation in shade can be seen

Fiber	*Dye*	*At low temperatures*	*At high temperatures*
Acrylic	A	60°F*	2°F
Acrylic	B	60°*	2°
Polyamide 6	A	60°*	6°
Polyamide 6	B	9°*	13°
Polyamide 66	A	60°*	7°
Polyamide 66	B	60°*	6°
Polyester	A	7°	40°*
Polyester	B	9°	40°*
Triacetate	A	40°	2°
Triacetate	B	60°	2°

*Indicates no significant change in dyeability throughout the full range of temperature tested.

PRACTICAL APPLICATIONS

Guide posts are available in this paper pointing toward techniques that will lead to improved commercial dyeing. As a generalized rule, it is shown that the temperature, tension, and moisture content of the fibers must be kept uniform in order to obtain uniform dyeing. It is also indicated that the duration of treatment and the type of dye can affect the dyeing variation. It is shown that the higher temperatures cause more rapid changes in dyeability, particularly at temperatures above 300°F. It should be pointed out that these general conclusions are not just of academic interest but also apply to the conditions and procedures normally used in dyeing the thermoplastic fibers.

The method of testing used in this project has produced quantitative results so that an accurate estimate can be made of the importance of dye variations. It has been pointed out in the description of the experimental procedure that the spectrophotometer results are accurate within 0.02% dye content. For this type of color and dyeing, the human eye is probably at least as sensitive as the spectrophotometer (*14*). Considering the possible variations in heat treatment and dyeing, the results are believed reproducible with ±2% of the dyeability rating as shown in Figures 1-5. This amount of difference can be seen readily in critical fabrics such as rugs and satins. Therefore, it is possible to calculate the variation in thermal treatment which will produce a visible change in dyeability. Thus, in the case of the polyamide 6 fiber with dye A, there was a decrease in the dyeability rating from 98% to 86% as the temperature was increased from 300°F. This caused a reduction of 12% in 60°F. Therefore a 2% change in dyeability would be caused by a 10°F change in temperature and a change of more than 10°F would cause a visible change in shade. Similar calculations have been made for each fiber and for each type of dyestuff at a low temperature range (180—240°F) and at a high temperature range (360-400°F). The results of these calculations are shown in Table VIII.

These figures indicate that, with the 40° to 60°F allowable temperature variation, no dye variation would be caused which would be commercially objectionable. The data also indicate that all these fibers can be given a thermal treatment in certain temperature ranges and dyed with selected dyes without showing shade variations even if the thermal treatment is not closely controlled. However, all of these fibers are very sensitive in certain temperature ranges and this observation applies to all of the dyes tested. Some of these fibers are more sensitive to temperature than was previously recognized. For instance, the manufacturer of the polyester fiber indicates that, if drying temperatures are kept below 200°F, little danger of uneven dyeing would be encountered (*2*). The present data indicate that, even at 180°F, an appreciable decrease in dyeability is produced with the polyester fiber. With certain dyes, an even more pronounced effect is found for the polyamide 6 fiber at 180°F.

The present data indicate that, in order to secure uniform dyeing, it will be necessary to have close control over the temperature of the thermal treatments that are used prior to dyeing. Many commercial operations do not have sufficiently close control at present for treatments such as slashing, setting, scouring, and dyeing to keep the treatment within the temperature limits indicated by these experiments.

The amount of moisture present during the thermal treatment can cause as much as a 400% change in the dyeability rating. This is indicated by the data given in Table IV. Therefore, uniform moisture regain, wet pickup, and drying are important to obtain subsequent uniform dyeing.

A uniform moisture regain has previously been recognized as being important to obtain uniform texturizing of thermoplastic fibers *(16)*, but it is now indicated that this is also important for uniform dyeing if the fiber is given a thermal treatment prior to dyeing.

The test results indicate that variations in tensions during the thermal treatment can cause a major change in subsequent dyeing. Tension changes as low as 0.2 grams per denier caused a 25% change in dyeability under certain conditions. This would indicate that very small changes in tension when the goods are hot can cause visible color differences.

Variations in tension, moisture, and temperature can occur independently so that their combined effect is greater than their separate effects. This is shown clearly in the data for the polyamide fiber in Table IV. Such a synergistic effect will make it necessary to have even closer control over each of these variables than is indicated by figures such as those in Table VI. In fact, some of the exploratory work showed that a temperature variation of as little as 3°F could cause a visible dye difference if the fiber was treated in steam at 250°F. Such close control is seldom realized in commercial plants. Therefore, it is concluded that variations in thermal treatments prior to dyeing can be a major cause of the variations of shade that are presently encountered in fabrics made of thermoplastic fibers.

CONCLUSIONS

1) Heat treatments as normally used in the textile industry prior to dyeing can cause large changes in dyeability of thermoplastic fibers.

2) Temperature, moisture content, tension, and probably time must be closely controlled in order to prevent shade variations.

3) Changes in dyeability occur more readily with temperature variations in certain temperature levels than in other levels. Specific data have been developed to aid the practical dyer in obtaining the proper temperature level and the allowable temperature variation.

4) The variation in dyeability with such heat treatments is due to changes in both the molecular orientation and crystallinity. An increase in the orderly arrangement of the molecules (due to higher orientation and higher crystallinity) will cause a decrease in dyeability.

5) Chemical changes in most thermoplastic fibers as a result of heat treatment do not have a significant effect on dyeability except at excessively high temperatures.

6) The effect of thermal treatments on dyeability is most critical with dyes which have large molecular cross sections. This is probably because the diffusion rate of such dyes is more critically affected by the steric hindrance of the fiber molecules.

SUGGESTIONS FOR FUTURE WORK

A project of this nature always suggests a number of new studies. It would be desirable, for instance, to expand the range of tensions used so that it would be possible to assess accurately the importance of changes in tension during the handling of the thermoplastic fibers.

The effect of moisture should be more fully investigated. This could take the form of studies involving both the amount of moisture in the fiber (regain) and the amount of moisture in the air (relative humidity and steam saturation).

The effect of duration of treatment was barely touched on in the exploratory phase of this project. The duration of the thermal treatment was found to affect the dyeability, but the degree of the effect is still not specifically known.

Temperatures in excess of 400°F are now being used in some commercial operations. Therefore, there is a need to extend the range of temperatures beyond those used in this project. The above variables of tension, moisture, time, and temperature are not independent in their effect on the thermoplastic fibers. In order to obtain a full understanding of their effect, it will be necessary to conduct future trials with all of these variables included in the tests. These future trials will be of most value if more sensitive techniques can be used to determine the degree of crystallinity and orientation.

An intriguing idea suggested by this work is the possibility of giving a high-temperature steaming before dyeing. Such equipment might be easier to use than high-pressure dyeing equipment and, in at least some cases, it can increase greatly the dyeability of the fiber.

Since this study has proven so fruitful with regard to both a theoretical understanding and practical application, we feel confident that further studies will be of even greater value.

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APPENDIX A

The total amount of dye absorbed by a fiber mass can be determined accurately by the following procedure. A Beckman DU spectrophotometer was used for the analysis reported in this project.

Method A was employed for those fibers which were soluble in a solvent suitable for the Corex cells of the spectrophotometer. The solvents used were dimethyl sulfoxide for the triacetate, 98-100% formic acid for the polyamide, and spectro-grade dimethyl formaide for the acrylic fiber.

METHOD A——

1) Dissolve 0.01 g of the dye powder in 100 ml of the respective solvent.

2) Take aliquots of two ml, five ml, and dilute to 25 ml. This gives a dye concentration of 8×10^{-5} g/ml, 20×10^{-5} g/ml, and 40×10^{-5} g/ml.

3) Using the Beckman DU spectrophotometer and one-cm Corex cells, obtain an absorption curve to determine the peak of absorption. The blank, or standard, is the pure solvent. One of the three aliquots serves for the absorption curve.

4) At the peak of the absorption, read the absorbencies of the three aliquot portions to determine the calibration curve.

5) Plot g/100 ml, dye vs absorption

6) Dissolve an appropriate amount of the sample so that the transmittency will be between 30% and 70%.

7) Using one-cm Corex cells in the spectrophotometer and the solvent as a blank, read the absorbencies of the solutions.

8) Calculate from the calibration curve the dye content of each sample.

Since the polyester fiber is soluble only in M-cresol or 80% phenol when heated, another procedure was employed. Monochlorobenzene was used to extract the dye from the dye powder and from the polyester fiber samples, as described in Method B.

METHOD B——

1) Reflux 0.01 gram of the dye powder in about 25-30 ml of monochlorobenzene for two hours. Dilute to 100 ml.

2) Proceed as in Method A, steps 2-5. Monochlorobenzene is used as the blank.

3) Weigh an appropriate amount of sample, so that the transmittency will be between 30% and 70%, into a 100-ml beaker.

4) Using successive five-ml portions of monochlorobenzene and then decanting into a volumetric flask, heat to a boil on a hot plate in a well-ventilated hood. Avoid allowing the solution to bump. When the sample has been extracted to completely white, boil one more portion of extractant.

5) Continue with steps 7-8, Method A. Use monochlorobenzene as the blank.

APPENDIX B

A short review of the theory confiber molecules is desirable because of its close connection with this paper. The following description explains how thermal treatments can affect the physical arrangements of the fiber molecules and how this arrangement can affect the dyeing properties through a type of steric hindrance.

The fiber is visualized as a network of submicroscopic threads of long-chain molecules. When the molecules are arranged so that they lie parallel to the fiber axis, the material is said to be oriented. When the molecules are arranged so that their chemical components are mutually attractive, a very regular lattice crystallite is formed and the material is said to be crystallized.

Heat can cause the molecules to move more readily because it induces the molecules to vibrate. Up to a point, this movement tends to increase the crystallinity. It also causes a more random or less oriented arrangement in the absence of tension.

Tension counteracts the tendency toward random orientation and, if it is high enough, will cause the molecules to become more oriented.

Moisture tends to "lubricate" the molecules and to break any temporary, weak bonds between molecules so that they can move more easily.

Schematic diagrams can be used to illustrate the effect that the orientation and crystallinity have on dyeability.

Figure 7 depicts the molecular arrangement of a fiber with moderate crystallinity and moderate orientation. In this diagram the short parallel lines indicate crystallite and the other areas indicate amorphous regions. With a certain dyeing technique, four dye molecules (indicated by dark ovals) have been able to penetrate this part of the fiber.

Figure 8 depicts the change occurring with greater orientation. In this case, three dye molecules have been able to penetrate because of the blockage or "steric hindrance" set up by the more regular arrangement of the fiber molecules.

Figure 9 depicts the change occurring when the fiber of Figure 7 becomes more crystalline. In this case, there is not only a blockage but also the dye is unable to penetrate the crystallites so that only two dye molecules are shown.

Figure 10 indicates that, with both high orientation and high crystallinity, the fiber becomes very resistant to dyeing and in this section only one dye molecule has been able to penetrate. This is located near the surface.

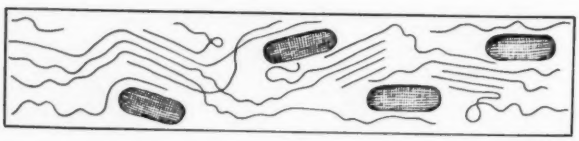


Figure 7
Moderate crystallinity and moderate orientation allow easy dyeing

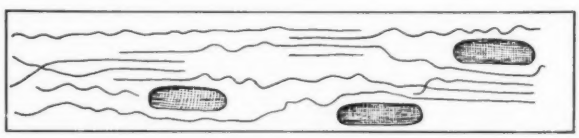


Figure 8
Moderate crystallinity and high orientation reduce dyeability

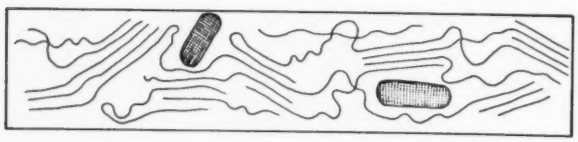


Figure 9
High crystallinity and moderate orientation reduce dyeability

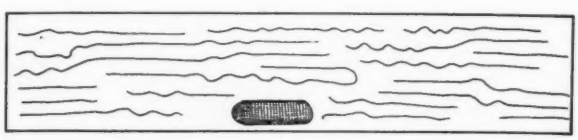


Figure 10
High crystallinity and high orientation prevent easy dyeing

37th CONVENTION ATTRACTS 850

APPROXIMATELY 850 members and guests registered for the 37th National Convention, which was concluded Nov 1st at the Conrad Hilton Hotel, Chicago, Ill. Although the figure did not meet expectations for the three-day affair, it was considered satisfactory in view of the absence of commercial exhibits, the general condition of the industry at this time, and the Convention city's geographical position in relation to the textile manufacturing industry.

This year's Convention was held under the auspices of the Western Region, which is comprised of the Mid-West, Pacific Northwest and Pacific Southwest Sections. The Mid-West Section accounts for approximately 75% of the membership of the Western Region, which, on May 1st, totaled 442.

The technical phase of the Convention featured the 19th Intersectional Contest, in which five sections participated; the general technical program, which offered 21 papers, presented in four sessions; and a symposium sponsored by the Technical Committee on Research.

Other highlights included the Olney Medal Luncheon, at which Henry E Millson was awarded the 15th Olney Medal; exhibits by sixteen subcommittees of the Technical Committee on Research; the Annual Banquet; a complete ladies program; and special tours to the American Institute of Laundering and the Morton Salt Company's "House of Color". The Council met for its 212th meeting during the affair.

Convention chairman Elliott Mor-

WESTERN REGION CONVENTION COMMITTEE FOR 1958 CONVENTION — Seated, l to r: John L Eich, publicity; H Thompson Latham, transportation; Elliott Morrill, chairman; Edwin I Stearns, assistant chairman; Archie G Alexander, ladies. Standing, l to r: David A Anderson, reception; Erwin J Sindt, hotel reservations; Joseph H Jones, hotel reservations; Jack G Kelley, publicity; Leonard J Armstrong, technical program; Frank S Stover, registration. Missing from photo are Warren B Broadbent, dining; J Gordon Stott, entertainment; and Victor C Braun, finance.

212th meeting of the Council

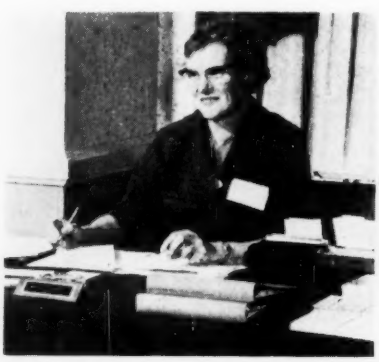
OLNEY MEDAL PRESENTATION — President George O Linberg, left, presents 15th impression of the Olney Medal to Henry E Millson. At right is William H Bowman, who eulogized the Medalist at the Olney Medal Luncheon.

Executive secretary George P Paine, left, congratulates Convention Chairman Elliott Morrill, right, as President Linberg looks on.

rill, AATCC vice president (Western Region), was assisted by Edwin I Stearns, assistant chairman, Harold Stiegler, staff secretary, and ten committees, as follows: Dining, Warren B Broadbent, chairman; Entertainment, J Gordon Stott, chairman; Exhibits, Charles W Dorn and Charles A Sylvester, cochairmen; Hotel, Erwin J Sindt, chairman; Printing, John L Eich, chairman; Publicity, Jack G Kelley, chairman; Registration, Frank S Stover, chairman, Harry W Ericson, assistant chairman; Technical Program, Leonard J Armstrong, chairman; and Transportation, H Thompson Latham, chairman.

Pictorial coverage of the 37th National Convention in this issue includes the Annual Banquet (page P865), the Intersectional Contest (page P866), the TCR-sponsored symposium "AATCC Research at Work" (page P867), and the TCR Exhibit (pages P868-P872).

MEETING OF THE NATIONAL CONVENTIONS COMMITTEE———Seated clockwise around the table are Frederick V Traut, Bernard K Easton, William O Griffin, Ernest R Kaswell (chairman), George P Paine (secretary), Raymond B Taylorson, and President Geo O Linberg. Standing, l to r, are Arthur I Hultberg, Leonard Smith (1959 Convention chairman), and Elliott Morrill (1958 Convention chairman)



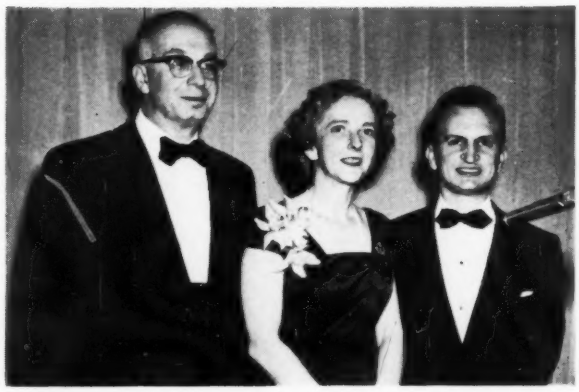
Mrs E R Goodale of the National Headquarters Staff who handled Personnel Service at the Convention

MEETING OF THE EXECUTIVE COMMITTEE ON RESEARCH———Reading clockwise around the table: Henry A Rutherford, P J Fynn, Raymond W Jacoby, Joseph E Norton, Elliott Morrill, Joseph H Jones, Stephen J Kennedy, Charles A Sylvester (vice chairman), Charles W Dorn (chairman), Harold W Stiegler (recording secretary), President George O Linberg, George P Paine, Ernest R Kaswell, Paul B Stam, Weldon G Helmus, and Alfred T Clifford.

The distaff side at the Convention

1958 Annual Banquet———

George O Linberg delivering the President's Address. (See page P787 of November 17th issue).



ADR Award winners Emery I Valko (left), Giuliana C Tesoro (center), and Waldek Ginilewicz. (See page P575 of November 3rd issue).

Elliott Morrill, presiding

Nelson S Knaggs, toastmaster

Tennyson Guyer, guest speaker

PRINCIPALS SEATED AT THE DAIS———Seated (l to r): Tennyson Guyer, guest speaker; Charles W Dorn, chairman, Executive Committee on Research; George P Paine, executive secretary; Giuliana C Tesoro, ADR Award winner; George O Linberg, president; Elliott Morrill, 37th National Convention chairman & vice president (Western Region); Father O'Hara; Henry E Millson, 1958 Olney Medalist; Myron D Reeser, vice president, Howes Publishing Co, Inc

Standing (l to r): Waldek L Ginilewicz, ADR Award winner; H Gillespie Smith, vice president, Southern Region; Martin J Lydon, president, Lowell Technological Institute; Ernest R Kaswell, vice president, New England Region; Nelson S Knaggs, toastmaster; Weldon G Helmus, vice president, Central Atlantic Region; Charles A Sylvester, chairman, Technical Committee on Research; Emery I Valko, ADR Award winner; Thomas J Gillick Jr, chairman, Intersectional Contest; William A Holst, Publications Committee; Harold W Stiegler, director of research

19th INTERSECTIONAL CONTEST

October 31, 1958

Conrad Hilton Hotel

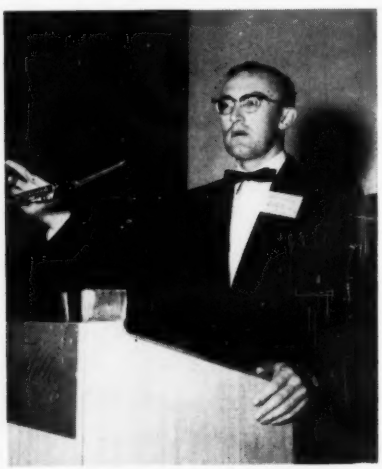
Chicago, Ill.

(See page P807 of Nov 17th issue)

1958 INTERSECTIONAL CONTEST JUDGES———Seated, l to r: Kenneth Giese, Mid-West Section; Louis Mizell, Washington; Albert H Rant, chief justice; Allen J Rooney, Hudson-Mohawk; John E Hirn, Western New England. Standing, l to r: Raymond B Taylorson, Rhode Island; Louis B Cook, Delaware Valley; Matthew G Bruckman, Metropolitan; Frank H Cooper Jr, Southeastern; John J O'Neill Jr, Northern New England; Henry J Crail, South Central; Victor S Salvin, Piedmont

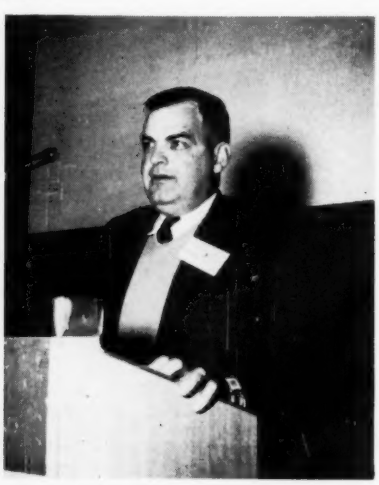
Intersectional Contest Chairman Thomas J Gillick Jr

Neal A Truslow, speaker for the Piedmont Section

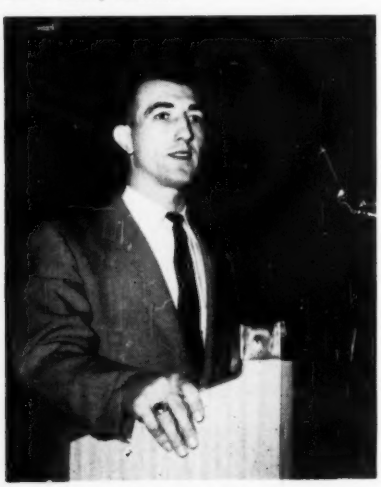


Donald P Hallada, speaker for the Delaware Valley Section

William E Aldrich, speaker for the Rhode Island Section



Frederick T Lense, speaker for the Southeastern Section



James E Miller, speaker for the Mid-West Section

"AATCC Research at Work"

Symposium sponsored by

TECHNICAL COMMITTEE ON RESEARCH

November 1, 1958

Conrad Hilton Hotel

Chicago, Ill

TCR LUNCHEON—HEAD TABLE———Seated, l to r: C A Bates, vice president, ASTM; George H Johnson, American Institute of Laundering, luncheon speaker; Geo O Linberg, president, AATCC; Charles A Sylvester, chairman, TCR; Charles W Dorn, Chairman, ECR. Standing, l to r; Gunther Baumgart, president, American Home Laundry Mfrs Assoc; Elliott Morrill, Convention chairman; Cameron A Baker, U S Testing Co; C Eugene Coke, CATCC

George H Johnson
"The Importance of AATCC to the Textile Industry and the Consumer"

Charles W Dorn
"AATCC's Contribution to Industry Through Research"

Charles A Sylvester
Opening remarks

Joseph E Norton
"Research Developments — Colorfastness to Light"

Richard F Aurich
"Research Developments — Damage Caused by Retained Chlorine"

Albert E Johnson
"Research Development — Colorfastness to Drycleaning"

Ralph B Smith
"Research Developments — Colorfastness to Washing"

P J Fynn
"Research Developments — Analysis of Consumer Complaints"

Edward Artim
"Research Developments — Dimensional Changes in Textile Fibers"

37th National Convention———

"Assuring Advancement Through Cooperating Committees"

SIXTEEN TCR SUBCOMMITTEES EXHIBIT AT CHICAGO

IN keeping with the theme of the 37th National Convention, "Assuring Advancement Through Cooperating Committees", the Technical Committee on Research sponsored an exhibit in the Normandie Lounge of the Conrad Hilton Hotel, Chicago, Ill, in which sixteen of its subcommittees participated.

Members of the various committees were in attendance to answer questions and discuss the phases of their particular problems.

President Geo O Linberg cuts ribbon to open Exhibit. Participating in the ceremonies, l to r, are: Joseph H Jones; William R Holst; ECR Chairman Dorn; TCR Chairman Sylvester; Edwin I Stearns, assistant convention chairman; Mr Linberg; Elliott Morrill, convention chairman; Harold W Stiegler, AATCC's director of research; and G P Paine, executive secretary.

COLORFASTNESS TO LIGHT ——The exhibit of this Committee featured a display of the results of extensive outdoor exposure testing during the past two years. A Fade-Ometer and a shuttered cabinet, of the type used by the Committee in its exposure testing, were included. As can be seen from the photo, numerous samples were on display, as follows:

a) *Sun-Hour Exposure Method*, showing wide variations obtained from month to month and location to location.

b) *Langley Exposure Method*, a comparison of monthly exposures for 12 consecutive months at Chicago, Phoenix and Sarasota. The samples show good correlation obtained on the majority of dyestuff-fiber combinations. A small percentage of the specimens and standards show small to considerable variations due to sensitivity to moisture and/or atmospheric contaminants.

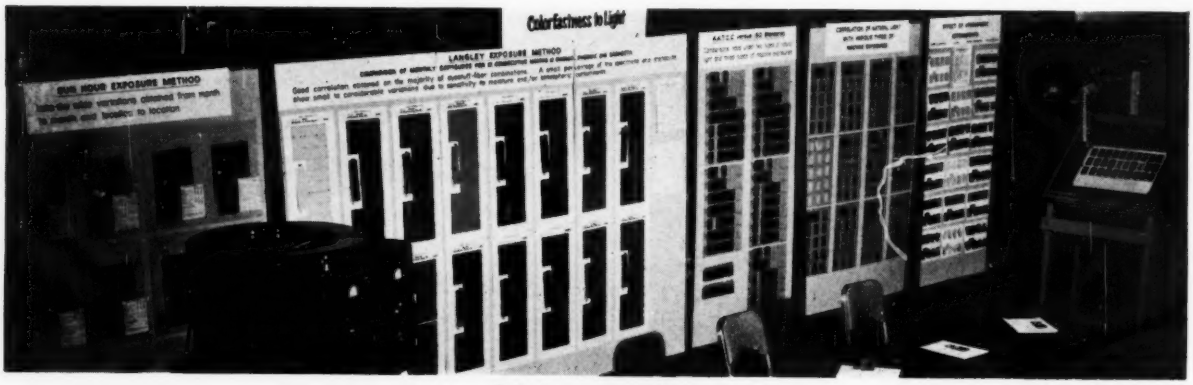
c) *AATCC vs ISO Standards.* Comparisons made under two types of natural light and three types of machine exposures.

d) *Correlation of Natural Light with Various Types of Machine Exposures.*

e) *Effect of Atmospheric Contaminants.* Oxides of nitrogen, ozone, alkaline contaminants, acid contaminants.

COLORFASTNESS TO CROCKING———The exhibit of this Committee, under the chairmanship of Henry E Millson, featured four attired mannequins with crock-tested samples of the clothing attached. Crockmeter models and various samples were also on display.

WATER RESISTANCE TO TEXTILE FABRICS———This exhibit spotlighted the development of the



Colorfastness to Light

Alternative Dynamic Absorption Test (TTM 70A-1958), showing the regular test, which utilizes a tumble jar now unavailable commercially and the new test, which utilizes Launder-Ometer metal tubes. Reprints of 70A-1958 were available.

DIMENSIONAL CHANGES IN TEXTILE FABRICS———A large reproduction of the table which appears in TTM 91-1958, "Dimensional Changes in Woven Textiles (Excluding Wool)" (cf *Am Dyestuff Reptr* 47, No. 21, P731-2, October 20, 1958) highlighted this exhibit. The chart also included the names of Committee members and a list of projects under study. Also included was a display of recently published work of the Committee.

LOUNGE———Copies of the four-volume *Colour Index* were on display, along with promotional literature on the work, the 1958 *Technical Manual*, and other AATCC literature.

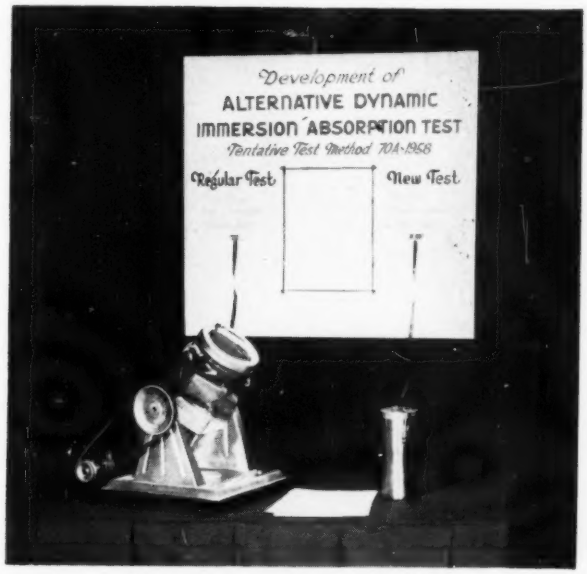
SNAG RESISTANCE OF NYLON HOSIERY———Visitors to this exhibit were able to examine the Snag Tester and view high-resistant and low-resistant samples of nylon hosiery. Flanking the central exhibit were two charts, one covering the purpose, correlation, validity, and suitability of TTM 65-54-AATCC; the other, a set of cartoons pointing out snag problems as they apply to the mill (preboard, dye-finish, sort and inspect box, and retail) and the customer (splinter hazard, pet control, hindsight, and the last bus).

IDENTIFICATION OF FINISHES———Central theme of this exhibit was "Why Gamble? Identify That Finish!". Methods of identification on display included the paper chromatography and infra-red techniques.

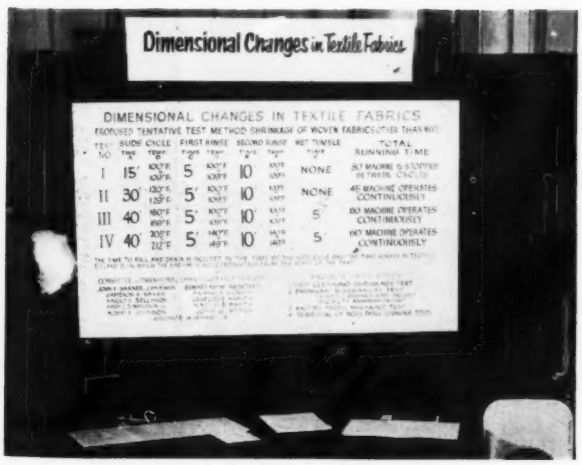
In the paper chromatography technique, a spot of the finish is placed on filter paper and a solvent wicks it along the paper. The distance from the solvent edge and characteristic colors identify the finish. One method for detecting spots on paper chromatograms is by U V light.

To point up the infra-red technique, the Committee displayed examples of the spectra of textile finishes which have been removed from the fabric by extraction with a suitable solvent—melamine, vinyl acetate, silicone resin, copper-8-quinolinolate.

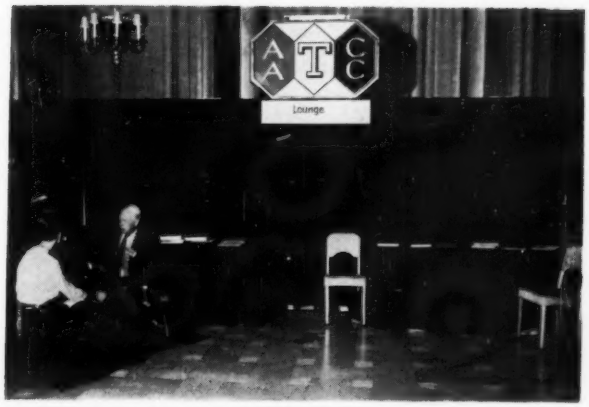
Colorfastness to Crocking



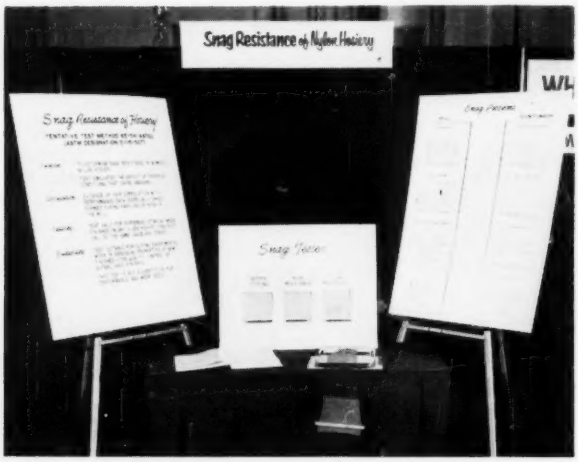
Water Resistance to Textile Fabrics



Dimensional Changes in Textile Fabrics

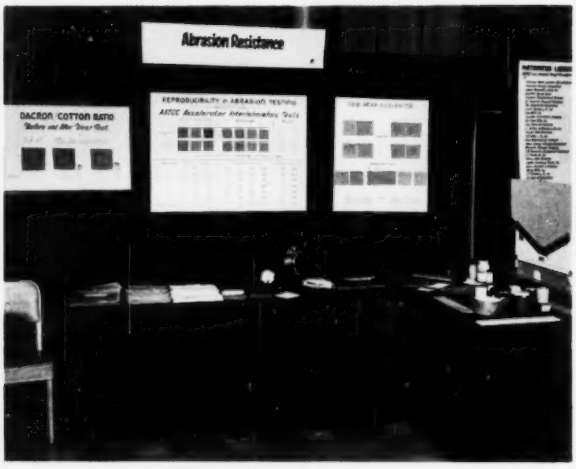


Lounge

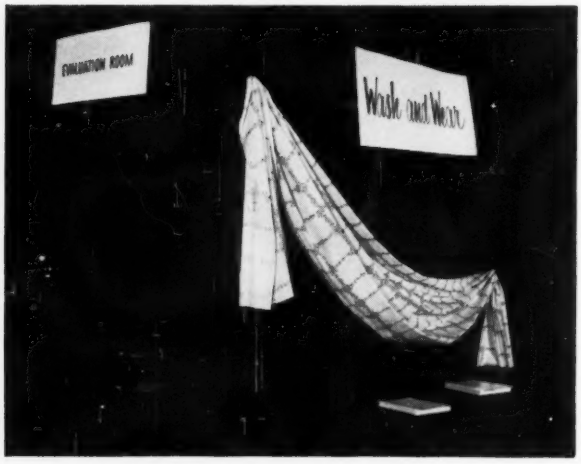


Snag Resistance of Nylon Hosiery

Identification of Finishes



Abrasion Resistance

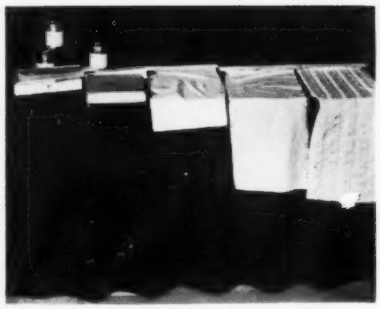


Wash and Wear Evaluation Room

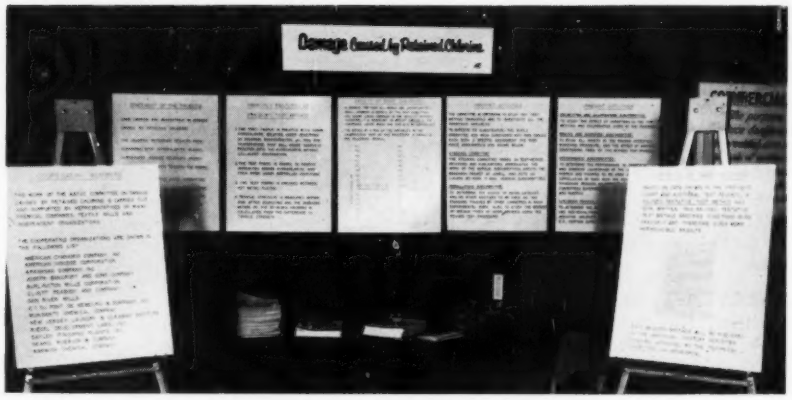
Wash and Wear

Colorfastness to Washing
NEW ACCELERATED TEST
COLORFASTNESS OF WORK CLOTHING FABRICS TO INDUSTRIAL LAUNDERING
Based on the AATCC Accelerotor
100% COTTON
MIXED FIBER FABRICS

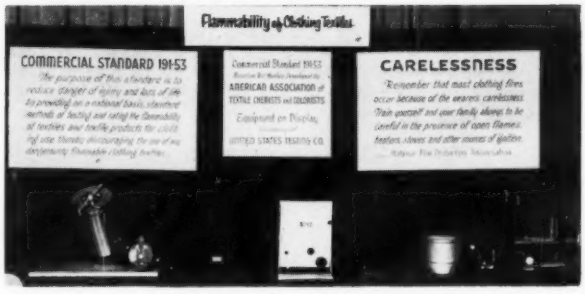
Colorfastness to Washing



End-Usage Performance



Damage Caused by Retained Chlorine



Flammability of Clothing Textiles

ABRASION RESISTANCE——Complementing a display of the Accelerotor and its accessories were samples of work clothing twills, cotton sheeting, and rayons used in abrasion testing; a chart showing reproducibility in the AATCC Accelerotor Interlaboratory Tests; a chart showing results of the Edge-Wear: Accelerotor testing on these fabrics; and a chart showing the Dacron cotton ratio before and after a wear test.

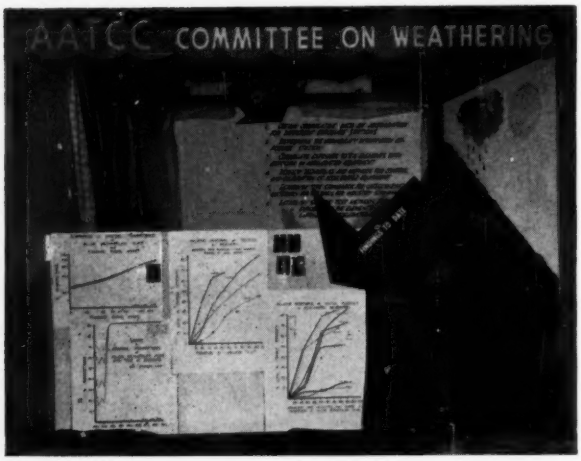
WASH AND WEAR——This exhibit featured various samples of "wash-and-wear" fabrics, which visitors were able evaluate against AATCC standard photographs in the "Evaluation Room". Large charts listed details of the four AATCC tests. namely, hand wash—drip dry, machine wash—drip dry, machine wash—tumble dry, and machine wash—line dry. Washer and dryer specifications were charted above the Norge automatic washer and dryer units at the booth. Also on display was a chart crediting participating laboratories.

WASHING——Theme of this exhibit was the Washfastness Committee's approach to the problem of colorfastness of work clothing fabrics to industrial laundering based on the AATCC Accelerotor. An Accelerotor fitted for washfastness testing with rubber-ribbed wash liner and offset rotor was on display along with a standard Launder-Ometer. Samples of work on 100% cotton using the new TTM 87-1958 were shown along with samples of mixed-fiber fabrics as an explorative extension of the test to include synthetics. Also shown were displays charting the development of the 3-A test.

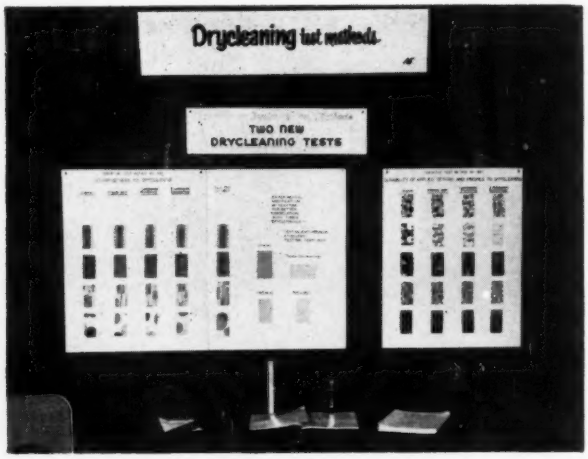
END-USAGE PERFORMANCE——On display were jars of Testfabrics Inc's gas-fading control samples; Crockmeter squares; and samples of moth test cloth, crockmeter cloth, and multifiber fabric #1.

DAMAGE CAUSED BY RETAINED CHLORINE——Display consisted of a scorch tester, a list of cooperating members, and the following charts: Status of the Test Method, Statement of the Problem, Principle Features of the Present Test Method, and Present Activities.

FLAMMABILITY OF CLOTHING TEXTILES——Equipment on display at this exhibit, including Flammability Tester and Brushing Device, was furnished by United States Testing Co. The purpose of Commercial Standard 191-53, which is based on a test method developed by AATCC,



Weathering



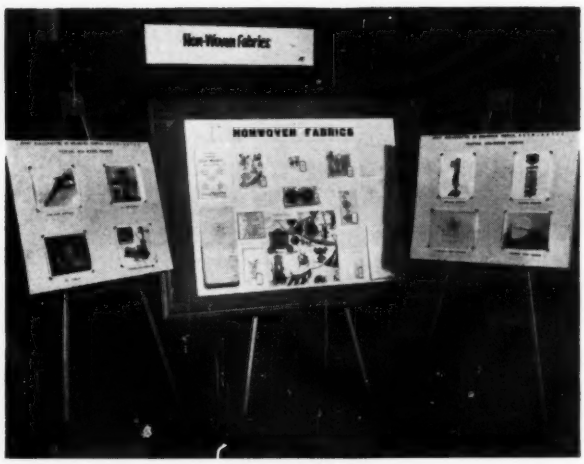
Drycleaning Test Methods

is to reduce danger of injury and loss of life by providing, on a national basis, standard methods of testing and rating the flammability of textiles and textile products for clothing use, thereby discouraging the use of any dangerously flammable clothing textiles.

WEATHERING——This exhibit outlined the scope of the Committee's program, and presented its findings to date as to: comparison of spectral transmittance of yellow methacrylate plate and standard fading hours, change of spectral transmittance of yellow methacrylate plate with time of exposure, relative response of textiles to weather, and relative resistance of textile materials to accelerated weathering.

DRYCLEANING TEST METHODS——Two new drycleaning test methods, TTM 85-1957, Colorfastness to Drycleaning, and TTM 86-1957, Durability of Applied Designs and Finishes to Drycleaning, were highlighted at this exhibit. Charts showed original samples compared with samples exposed to the test methods, one and three commercial drycleanings. Also on display were International Geometric Gray Scale, a pint glass jar (used in TTM 85-1957), and a stainless-steel cylindrical container (called for in TTM 86-1958).

NONWOVEN FABRICS —— Center of this display was an exhibit of several products made from nonwoven fabrics. Flanking charts showed photos of equipment used in testing of nonwoven fabrics, ie, for cantilever stiffness, drycleaning, air permeability, internal bond strength, breaking strength, trapezoid tear strength, bursting strength, and recovery from creasing.



Nonwoven Fabrics

Nuclear Radiation

NUCLEAR RADIATION —— Applications of radioactive tracer elements to various phases of the textile processing industry were highlighted by this exhibit, where visitors were able to view the following equipment in operation: Labitron geiger counter, Tracerlab beta gauge, and Cloudmaster (Nuclear-Chicago). Flanking the equipment were charts showing photos of work in progress at Institute of Textile Technology, Georgia Institute of Technology, Clemson College, Textile Research Institute, North Carolina State College, and the Southern Regional Research Laboratory, USDA.

Membership Applications

SENIOR

Olof T Akerberg—Technical manager, H Liljeroos Oy, Tampere, Finland. Sponsors: J V Moore, C H M Moring.

Karl Bosshardt—Dyer, Essex Mills, Inc, Pawtucket, RI. Sponsors: J M Scott, F W Fraim. (RI).

Massimo Cazzaroli—Chief, technical staff, SILAN, Carpi (Modena), Italy. Sponsors: E D Lind, H K Liffman.

Thomas E Croxson—Director, Dye Application Lab, The Chemstrand Corp, Decatur, Ala. Sponsors: W Stump, W F Brommelsiek. (SE).

Louis F Cocker Jr—Staff assistant, Scovill Mfg Co, Clarkesville, Ga. Sponsors: G J Mandikos, J F Kosowicz. (SE).

Albert J Cunningham—Dyeing & finishing supv (development), Riverside Silk Mills Ltd, Galt, Ont, Canada. Sponsors: R Jesel, K A Lister. (NF).

Francis W Day—Chief chemist & supt of dyeing, Firth Carpet Co, Auburn, NY. Sponsors: H E Millson, S S Hockridge. (HM).

Rolf H Forrer—Manager, application of dyestuffs & textile chemicals, Sandoz de Mexico SA, Mexico, DF, Mexico. Sponsors: C H A Schmitt, J W Luthy.

Richard S Hunter—Designer, optical test methods, Hunter Associates Lab, Inc, McLean, Va. Sponsors: R K Worner, M S Furry. (SE).

Carl E Johnson—Senior technical advisor, National Aleminate Corp, Chicago, Ill. Sponsors: F S Stover, H W Ericson. (MW).

James M Kiefer—Chemist, Ciba Products Corp, Kimberton, Pa. Sponsors: G R Owens, C E Hutz. (DV).

Lloyd Leonard—Dyer, Watuppa Finishing Co, Fall River, Mass. Sponsors: H X DeRedon, G L Wyatt. (RI).

Robert B Lindstrom—General foreman, Greenville Mill, Greenville, Miss. Sponsors: S J Martin Jr, G P Paine. (SCL).

Thomas D Miles—Chemist, Quartermaster R & E Command, Natick, Mass. Sponsors: F J Rizzo, W E C Yelland. (NNE).

Ross C Peffal—Colorist, C H Masland & Sons, Carlisle, Pa. Sponsors: G J Littlewood III, W D Humphreys. (DV).

J Kenson Simons—Director, Textile Laboratories, Quaker Chemical Products Corp, Conshohocken, Pa. Sponsors: R Hargreaves, J H Davids. (DV).

Robert A Sullivan—Chemical director, Skinner & Sherman Co, Inc, Newton, Mass. Sponsors: R E Morrison, J K Frederick Jr. (NNE).

Ken Yonezu—Researcher, Tsushima Dyeing & Finishing Co, Ltd, Shobata, Saori-cho, Ama-gun, Aichi-Pref, Japan. Sponsors: C Z Draves, E M Taylor.

JUNIOR

Thomas G Ellington Jr—Sales trainee, E I duPont de Nemours & Co, Inc, Wilmington, Del. Sponsors: V Lyon, G T Hug. (DV).

Manuel A Mercado—Assistant dyer, Insular Dye Works, Aguas Buenas, PR. Sponsors: R M Combs, V T Hartquist.

Thomas S Quealy—Textile chemist, Becco Chemical Div, Buffalo, NY. Sponsors: B K Easton, N Weinberg. (NF).

Thomas F Rooney—Chemistry technician, Ludlow Mfg & Sales Co, Needham, Mass. Sponsors: A G Hoyle, W B Kaupin. (NNE).

Francis J Scavitto—Research chemist, Crown Chemical Corp, Providence, RI. Sponsors: R A Pingree, W E Murray. (RI).

ASSOCIATE

Dorothy A Bissell—Teacher, asst prof, textiles & chemistry, Humboldt State College, Arcata, Calif. (PSW).

Herbert P Chase—Vice president, Chemical Mfg Co, Inc, Los Angeles, Calif. (PSW).

Shih K Fan—President, CAC of New York, Inc, New York, NY. (Met).

Allen C Frick—Field specialist & sales engr, Morton Salt Co, Charlotte, NC. (Pied).

Hiram H Jackson—Salesman, Morton Salt Co, Chicago, Ill. (MW).

James G Marvin—Asst mgr, Granite Finishing Co, Cone Mills Corp, Haw River, NC. (Pied).

Howard H McCall—District mgr, J O Ross Engineering Div, Midland-Ross Corp, Atlanta, Ga. (SE).

Ernest G Tesch—Manager of sales service, General Aniline & Film Corp, Linden, NJ. (Met).

Richard C Voyles—Resident salesman, Chapman Chemical Co, Memphis, Tenn. (SCL).

William D Weathers—Buyer, dyestuffs & chemicals, Palmetto Service Corp, Greenville, SC. (Pied).

STUDENT

John Apinis, Mack Atkinson, James N Etters, Bruce A Evans, Troy D Grant, Robert C Hartzog, Roger A Hinson, Russell S Kingsmore, William M Owens, Gerald S Rose, and Ralph E Sims—Students, Clemson College, Clemson, SC. Sponsor: J Lindsay. (C).

Muriel Angelil—Student, Lowell Technological Institute, Lowell, Mass. Sponsor: G R Griffin. (LTI).

Milton A Berube, William Conn, Carol M Hebert, Elizabeth A Johnson, and Norman Nevins—Students, New Bedford Institute of Technology. Sponsor: F Tripp. (NB).

Clayton G Asbury, Charles E Daniels, Charles Gotuaco, Alexander J Kepley, Wing Lee Kai, Bobby F Mayse, Elbert S Mullis, John R Newell Jr, Charles E Rickell, H Ashok Sanghavi, James M Seago, William C Smith, James T Swicegood, Robert Lee Ward Jr, Robert W West, Fred E Wilson, and Ibrahim Yuceyar—Students, North Carolina State College, Raleigh, NC. Sponsor: H A Rutherford. (NC).

Ashok M Patel—Student, Philadelphia Textile Institute, Philadelphia, Pa. Sponsor: W H Hughes. (P).

TRANSFER—STUDENT TO ASSOCIATE

Joseph A Power—Junior tech man, Textile Group, B F Goodrich Chemical Co, Avon Lake, O. Sponsors: J C Broadmeadow, E J Dupre. (SE).

TRANSFER—JUNIOR TO SENIOR

Martin Kornhauser—Lab tech, Sandoz, Inc, New York, NY. Sponsors: J O Whitaker, F T Rodgers. (Met).

Luc L Gregoire—Dyer, Danielson Finishing Co, Danielson, Conn. Sponsors: F C Bray, J A Harley. (RI).

John J O'Keefe—Chemist, Vertipile Inc, Lowell, Mass. Sponsors: R E Morrison, G J Mandikos. (NNE).

TRANSFER—ASSOCIATE TO SENIOR

Donal E Bailey—Colorist, Sidney Blumenthal & Co, Caramount Div, Rocky Mount, NC. Sponsors: D W Adams, T L Howle Jr (Pied).

Richard A Feis—Tech dir, Cone Mills, Inc, New York, NY. Sponsors: H L Mercer, R H Souther. (Met).

Frank G Pielenz—Chemist, Jos Bancroft & Sons, Wilmington, Del. Sponsors: J F Leonard, E F Pierce Jr. (DV).

Herbert A Stauderman—Adv mgr, American Dyestuff Reporter, New York, NY. Sponsors: G P Paine, J K Frederick. (Met).

William G Sumner—Chemist, General Aniline & Film Corp, Easton, Pa. Sponsors: G M Gantz, L Fusser. (Met).

ACTIVITIES OF THE LOCAL SECTIONS

Delaware Valley

NINETY-seven members and guests attended the October 17th meeting of Delaware Valley Section, held at Kugler's Restaurant, Philadelphia, Pa. Chairman William Sollenberger, American Viscose Corp, presided.

Speaker of the evening was Henry E Millson, American Cyanamid Co, whose talked was entitled "Microscopical Studies with the High-temperature Microdyeoscope". The effects of time and temperature on the rate of dyeing and the various components of the dyebath on the fiber were described and illustrated with color photomicrographs.

The next meeting of the Section will be held this Friday, Dec 5, at Kugler's, at which time Fernand Schlaeppi, technical manager, Ciba Co, Inc, will discuss the fiber-reactive dyes.

Metropolitan

THE Metropolitan Section will meet Dec 12th at Kohler's Swiss Chalet, Rochelle Park, NJ, at which time a speaker from Eastman Chemical Products, Inc will discuss "The Dyeing and Finishing of Kodel Polyester Fiber".

Northern New England

A panel consisting of Victor S Frank, Dewey & Almy Chemical Co, D Donald Gagliardi, Gagliardi Research Corp, Herman F Mark, Polymer Research Institute, and Lloyd H Perry, UBS Chemical Co, Inc, will discuss "Polymers as Related to Fabric Processing" at the December 5th meeting of the Northern New England Section, which will be held at the Hotel Vendome, Boston, Mass.

Washington

THE Washington Section will hold its first dinner meeting of the season on Friday, December 5, at the Occidental Restaurant, Washington, DC. A brief business session and election of officers for 1959 will precede the technical program.

The speaker of the evening will be Joseph Barach, manager, Applications Development Department, Celanese Corporation of America. In his talk on "Nonwoven Fabrics" Mr Barach will discuss the development, manufacture and end uses of these new materials and describe how and in what areas they compete with conventional textiles.

Western New England

AT the Annual Meeting of the Western New England Section, held October 24th at Rapp's Restaurant, Shelton, Conn, the following officers were elected for the coming year:

Chairman — Andrew W Goodwin, Princeton Knitting Mills, Inc

Vice Chairman—Albert H Rant, Laurel Soap Mfg Co

Secretary — Timothy J Horan, Princeton Knitting Mills, Inc

Treasurer—Alexander H DeMarco, Shelton Hosiery Mills, Inc

Councilor—John E Hirn Sr, National Aniline Div

Sectional Committee—Mark Pettit, Heminway & Bartlett Mfg Co; Paul W Reeves, Princeton Knitting Mills, Inc; Thomas J Gillick, American Felt Co; Vasil J Pappas.

Following the election, a DuPont Company film entitled "A Story of Research" was shown.

Approximately 40 members and guests were present.

AATCC Calendar

COUNCIL, COUNCIL COMMITTEES, RESEARCH COMMITTEES

Jan 28-30 (Hotel McAlpin, New York, NY)
Jan 28—Research Committees
Jan 29—Council Committees, TCR, ECR
Jan 30 (AM)—Council Meeting

May 30, 1959 (Mount Royal Hotel, Montreal, Canada)

NATIONAL CONVENTIONS

Oct 8-10, 1959 (Sheraton Park and Shoreham Hotels, Washington, DC); Oct 6-8, 1960 (Sheraton Hotel, Philadelphia, Pa.); September 28-30, 1961 (Buffalo, NY); 1962 (Southern Region)

DELAWARE VALLEY SECTION

Dec 5 (Kugler's Restaurant, Philadelphia, Pa)

HUDSON-MOHAWK SECTION

Jan 16 (Jack's Restaurant, Albany, NY); Mar 27 (Chelsea House, Tribes Hill, NY), May 15 (Ladies night, Albany area); June 26 (Annual outing—Antlers Country Club, Tribes Hill, NY)

NIAGARA FRONTIER SECTION

Dec 5 (Buffalo, NY); Feb 20 (Niagara Falls, Ont); April 4 (Hamilton, Ont—joint meeting with CATCC)

NORTHERN NEW ENGLAND SECTION

Dec 5 (Hotel Vendome, Boston, Mass); Jan 16 (Colonial Club, Lynnfield, Mass)

PIEDMONT SECTION

Jan 24 (Poinsett Hotel, Greenville, SC); April 10-11 (Robert E Lee Hotel, Winston-Salem, NC); June 5-7 (Outing—Grove Park Inn, Asheville, NC); Sept 25-26 (Barringer Hotel, Charlotte, NC)

RHODE ISLAND SECTION

Dec 4 (Annual Meeting—Johnson's Hummocks Grille, Providence)

SOUTH CENTRAL SECTION

Jan 10, Mar 21, Sept 19 (Hotel Patten, Chattanooga, Tenn); June 26-27 (Outing — Riverside Hotel, Gatlinburg, Tenn)

SOUTHEASTERN SECTION

Dec 6 (Atlanta, Ga)

WASHINGTON

Dec 5 (Occidental Restaurant, Washington, DC)

WESTERN NEW ENGLAND SECTION

Dec 5 (Rapp's Restaurant, Shelton, Conn)

(Continued from page 850)

handled in the automatic open-width boil-off machine of a Swiss machinery manufacturer.

This compact machine is actually an enclosed jig, and the reason that it is so effective lies in the fact that it is provided with an oscillating expander, which insures creaseless winding up of the fabric on the main rollers. It is furnished with a reliable reversing and stopping device with a counter for regulating automatically the number of ends run.

During running time, the chamber is hermetically sealed; and when the operation is completed, the pressure is released and the cover removed so that the fabric can be run out of the machine. (See Figure 4.)

DYEING

Zipper tapes are being economically and effectively dyed on a molten-metal dyeing machine, such as was described in this annual review of a couple of years ago.

The machines are made to handle one single strand at the rate of 2500 yards per hour (Figure 7) or up to 12 strands simultaneously at the rate of 28,000 yards per hour. (Figure 5).

As is the case with the piece goods dyeing machine previously noted, the machine is particularly adapted for dyeing with vat colors. A single-strand unit was shown at the International Textile Machinery Exhibition at Belle Vue, Manchester in October.

This single-strand machine occupies an area of only 12 by 6 feet, which covers the preheating cylinder, the molten-metal dye unit, the after-treatment range and the finishing cylinder, the combination making a very compact, complete dyeing and finishing machine, which dyes and finishes the tapes at the speeds indicated above.

Complete and perfect washing is included in this series of operations by the simple expedient of passing the tape spirally around the rollers in the soaping beck.

A further modification of the molten-metal dyeing idea is a machine designed to dye yarn in the form of chain warps. Several strands of chain warps are handled at a time, the first operation being heating on steam cylinders; temperatures in these cans and on the molten-metal unit are automatically controlled. The formula is established by dyeing samples on a small laboratory machine. Following the dyeing the warps are led through a washing range where they are oxidized, rinsed, soaped, rinsed again and either plaited down in a truck or passed directly into the drying machine. (Figure 6).

Dyeing six strands at a time, it is said that a production of between 500 and 1,000 pounds an hour can be attained.

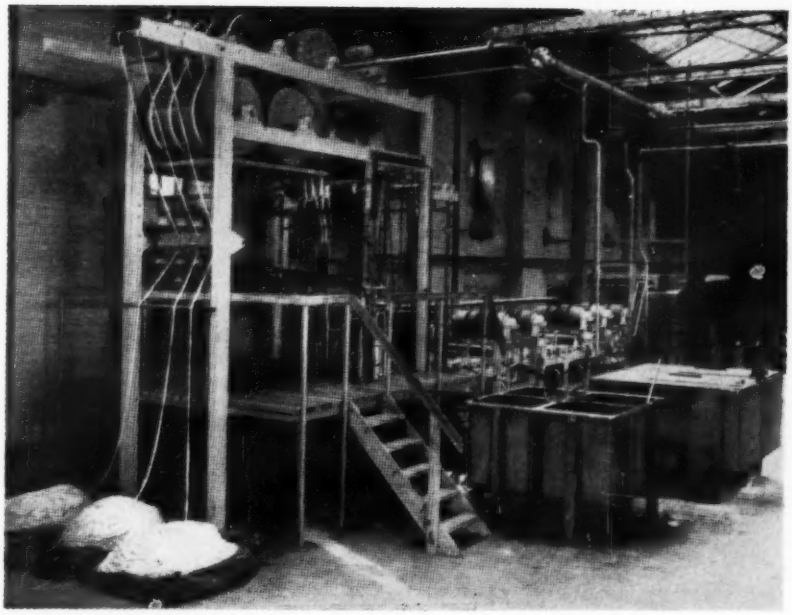


Figure 5
Warp-dyeing range

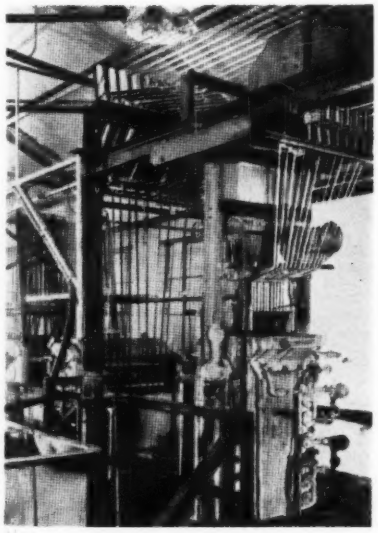


Figure 5
Twelve-strand dyeing range for narrow fabrics

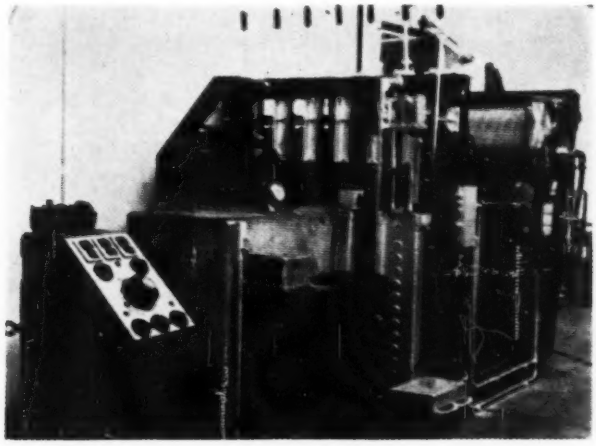
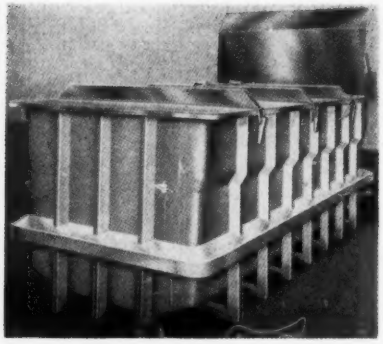


Figure 7
Single-strand dyeing range for narrow fabrics



For yarn dyeing, there is a unique combination of machines that we might call "father and son," consisting of an all-stainless unit on the principle of the Hussong yarn-dyeing machine, in which the yarn is dyed in hanks or skeins, 500 lbs at a clip, the yarn remaining stationary in the part of the machine provided for it, while the dye liquor is circulated in either of two directions by propellers in a separate chamber at the end of the machine. (Figure 8a).

The "son" part of this combination (Figure 8b) is a small machine having a capacity of two to three lbs yarn, in which a formula can be established on the smaller quantity of material, after which the large bulk can be dyed by calculating the exact equivalent of the formula for the larger quantity. This is possible as the liquor-to-goods ratio is exactly the same in the sample machine as it is in the big machine. This can save a dyer a lot of trouble, especially at the beginning of a season, in establishing formulas for the new style colors.

* * *

Figure 9 shows a kind of dyeing machine that is used in Europe for dyeing candlewick goods.

It has a capacity of 100 pounds dry weight Candlewick disposed in two compartments. The construction is

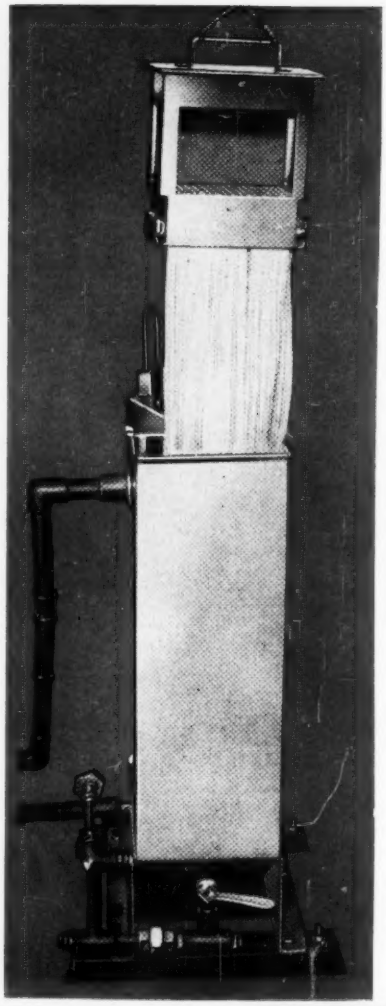


Figure 8a (top, left)
Figure 8b (center)
"Father and son" combination for yarn dyeing

stainless steel throughout. It is driven by a four HP motor through a clutch and is provided with all the necessary fittings for hot water, cold water and steam connections.

The outlet valve is extra large to permit rapid emptying of the machine and to allow adequate rinsing.

* * *

Through a Pakistan journal, we learned of a hosiery-dyeing machine which seems to be finding favor with New Zealand dyers, of all people.

It is said that four dozen pairs of stockings can be scoured, dyed and resin-finished in a production cycle of the incredibly short period of seven and one-half minutes.

The form ring (see Figure 10), holding 48 stockings, slides to the operating position. The cover, seen above the stockings, slips down automatically over the stockings and is locked in position. The necessary scouring and dyeing solutions are metered into the closed circulating system, each at the appropriate time from one or the other of two overhead tanks. These are sprayed from revolving heads inside the cover at 250°F, followed by drying at 210°F with air blown up into the apparatus from a fan and steam coils in the base of the machine.

Operation of the cover is accomplished by pneumatic control, both up and down. A full form is being prepared while the first one is being dyed so that little time is lost in changing from one lot to the next.

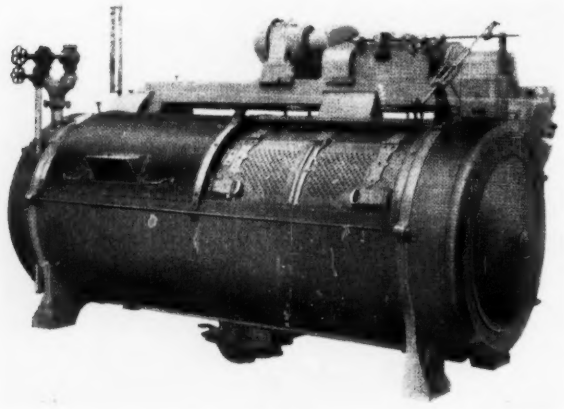


Figure 9
Rapid dye machine

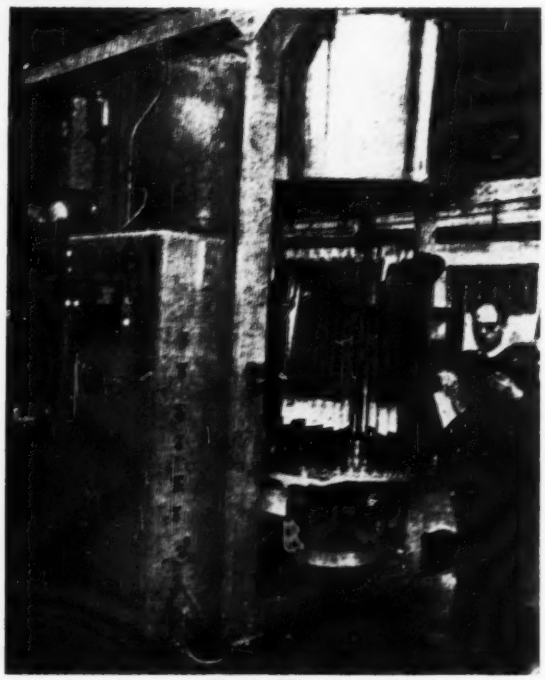


Figure 10
Hose dyeing and finishing in a single process

PRINTING

One of the matters that has given pause to those who have a rather small screen-printing output in mind is the matter of cost and the space occupied by the apparatus including the drier. Then again, many prospective printers have no intention of printing the elaborate designs possible on machines furnished with means to print nine, 12 and even 17 colors.

A Dutch machinery manufacturer has put on the market a smaller type capable of printing from one to five colors, with the possibility of increasing this number by means of "fall-ons." This is quite sufficient for many printers and gives sufficient flexibility for many types of printing for many purposes. (Figure 11).

This machine takes up far less floor space than the machines designed to turn out the higher numbers of colors and is more economical in first cost and undoubtedly also in upkeep.

Like the large machines, this economy-size apparatus offers a printing speed of up to 750 yards an hour, the same accuracy of repeat, low power consumption, and comparative simplicity of design.

Such a machine should supply a need in the printing of tricot for sports wear and for children's garments, as these two branches do not require too many colors or very large repeats.

* * *

Figure 12 illustrates the first British screen printing machine of which we have any knowledge.

This is about all we can offer in the way of information, as we have not yet heard from our namesake, who is the maker of this apparatus.

In appearance it resembles some of the German, Swiss and Czechoslovak machines to which we have drawn attention in years past.

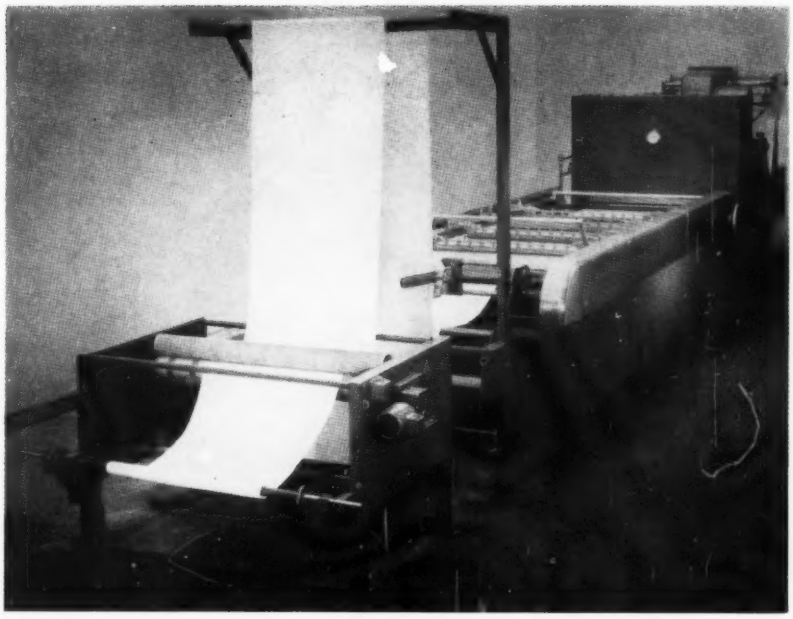


Figure 11
"Economy-size" screen printing machine

FINISHING

The crease-retaining finish introduced by the Commonwealth Scientific and Research Organization, a government activity in Australia, which depends on the application of a solution of thioglycollic acid, is a new method of treating wool and worsted goods.

A machine has been invented by an Australian machinery concern with which this agent is applied to finished and pressed garments.

It seems to be a chest or chamber into which the garment is introduced on a movable platform. Four sprays which may be all used simultaneously or can be used singly or in any desired combination of sprays create a vapor within the chamber which deposits suitably on the garment.

From the description we have read, it seems to us that the introduction of the goods on a "dummy" might be more certain to provide effective distribution of the acid solution on all parts of the garment.

After treatment, the platform with the garment on it slides out of the machine and is subjected to exhaustion by a fan that removes any excess of vapor.

DRYING

Figure 13 shows a type of dryer many concerns are suing in some parts of Europe for drying candlewick.

It has a capacity of 50 pounds dry weight candlewick at a time. It seems to be quite similar to equipment currently being used in this country, being fitted with steam heater battery, driven by a one HP motor; the

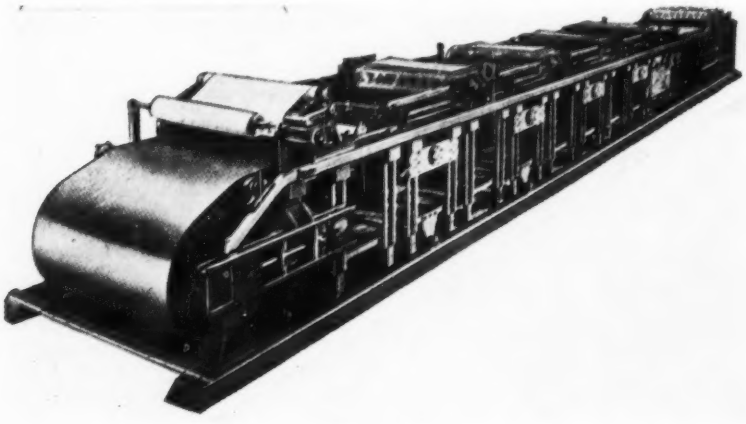


Figure 12
Automatic screen-printing machine

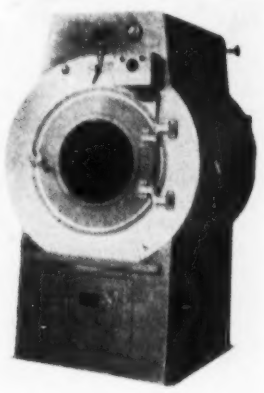


Figure 13
"Ozone" drying tumbler

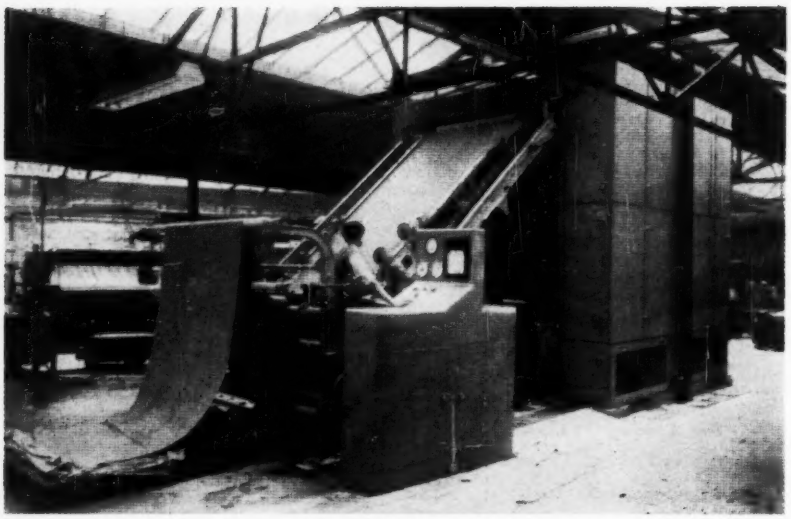


Figure 14

axial-flow-type fan is run by an independent motor and the temperature of the air in the device is automatically controlled. It is furnished with a lint box to prevent fouling of the heater and with an automatic timer.

* * *

The air circulation system in one of the best-known European dryers has been redesigned to give the highest drying effect from the minimum amount of floor-space, which is an important item these days. The machine is very flexible and is suitable for drying cloths of all widths from 27 to 140 inches in practically all weights of goods. Hot dry air is passed into the machine at the lowest level of the machine where the goods exit is situated; it is recirculated successively at each ascending level, making its way out at the highest level, where the cloth enters. It takes from 1.5 to 1.9 pounds of steam to evaporate one pound of water from the wet cloth. The machine is driven by variable speed motor, so it can be used at lower speeds giving less production with a consequent saving of pounds of steam used per pound of water evaporated. (See Figure 14).

A new method of riveting the chain links is being used that is calculated to give longer wear and elongation of the bores. *The rivets are grooved to stop their rotating.* The heaters are disposed in two banks on both sides of the machine and are provided with easily cleanable filters to remove the lint or flock to keep the heater pipes from clogging and to prevent it from redepositing on the cloth.

RECORDER

Records kept by the operator of any machine or group of machines are apt to suffer from the usual discrepancies due to human fallibility —forgetfulness—recording the wrong data—failure to observe the reactions on which data is required.

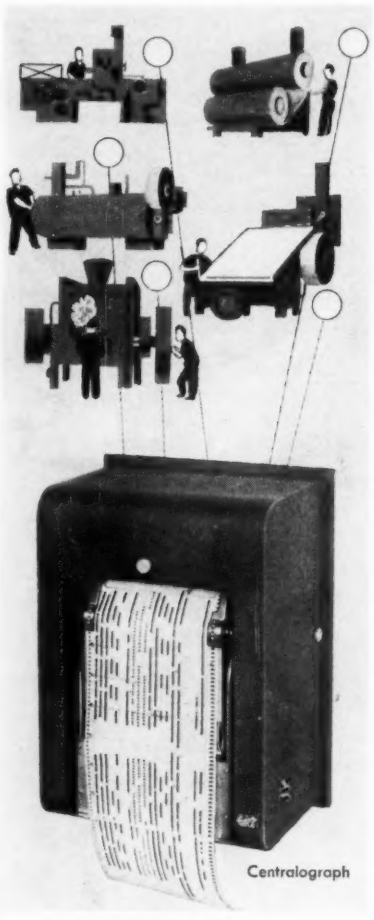


Figure 15

One of the latest machines designed to overcome these deficiencies is a central recording machine which shows which machines are running, which are stopped, and the reason for the stoppage, and many other details interesting and necessary to good management.

All this is recorded on a chart at a remote point, preferably the manager's office, so that he may see exactly just what is going on at any minute of the day or night.

The advantages of such a device are obvious.

NEW TEXTILE MATERIALS

One of the large fiber manufacturers has been granted a patent for still another type of "bulked" or "texturized" yarn.

This process, they say, will not only be applied to natural rayon but is due to be used also on "dope" dyed or "solution" dyed fibers.

Fabrics composed of such yarns undoubtedly will be finished, in most cases, directly from the loom, but sometimes such cloths do require very special treatment in both wet and dry finishing to produce the very best results.

A similar yarn composed of acetate fiber has been introduced by another fiber manufacturer both in the straight acetate and in blends with nylon. This seems to be specially well adapted to the knitting of sweaters and other garments.

It is said that garments made of such a yarn are very satisfactory for people who are allergic to other fibers, that they are cool, soft, keep their shape and do not shrink. One other advantage possessed by a garment of this material is freedom from insect attack.

A new metallic yarn in staple form has been put on the market in the past year, which is said to be doing very well. This seems to be the first practicable *staple* metallic yarn. According to the manufacturer this is because of its permanent crimp. This staple fiber is said to be miscible with cotton, wool and most of the synthetic fibers in all proportions.

It is said to have satisfactory resistance to laundering, to drycleaning and to wear. It can be obtained in multicolor form.

Naturally, it evidently has the required qualities to make it useful in grege fabrics that are scoured and dyed.

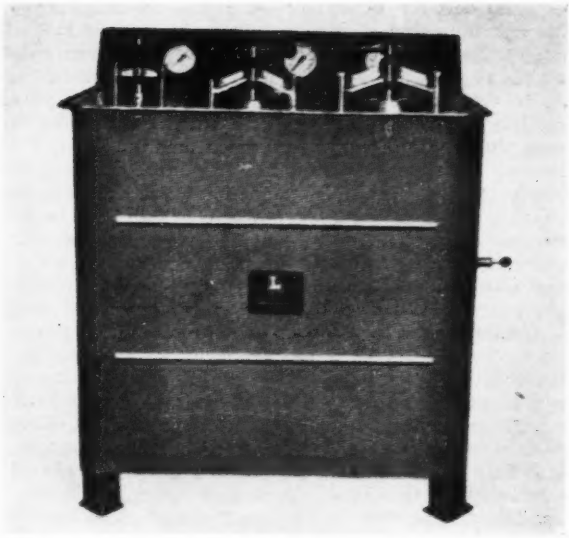


Figure 16

LABORATORY

One piece of laboratory apparatus that seems to be becoming indispensable is the laboratory pressure dyeing machine, some types of which we have mentioned in previous issues of HIGHLIGHTS.

Still another of these has appeared which is said to be very simple in operation and suitable for use at temperatures up to 130°C (266°F), which should be enough for anybody.

This machine should be found useful in determining the effect of high temperature on new dyestuffs, for making small-sized samples, and for working out formulas for dyeing on full-sized pressure dyeing machines. Figure 16 shows a picture of it.

* * *

Figure 17
Siphoning starter

Anyone who has worked for any time at all in the laboratory has frequently become intimately acquainted with the taste of all the acids, alkalies and other reagents on the laboratory bench, while attempting to start liquids to flow through a siphoning tube in the good old-fashioned way.

Some ingenious chemist has made life more worth while living by the invention of a novel gadget designed to eliminate the often dangerous and unhygienic practice of suction by mouth to accomplish this troublesome operation. It consists of a pair of tongs provided with a pair of diminutive squeeze rollers between which the rubber tubing is compressed. By pulling the tongs downwards, a vacuum is created in the tubing which lifts the liquid "over the hump" and causes it to flow when the tongs are released. It requires little effort to compress even heavy-walled tubing with this very useful siphon starter. Remember the old bung starter?

Abstracts

New Universal Padder for Dyeing and Finishing

Anon, *Mensucat Meslek Dergisi* (Turkish), 1958

A German textile machinery manufacturer has developed a new type of padder which can be readily adjusted so that it is adaptable for use in carrying out a variety of operations in textile dyeing and finishing.

The conventional padder consists of two or three squeeze rolls set in a frame, generally capable of running at one set speed and useful for only one, or, at the most, two or three types of work.

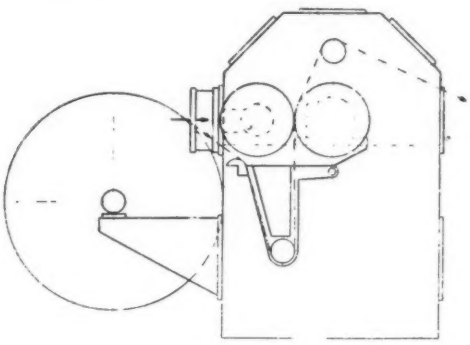


Figure 1

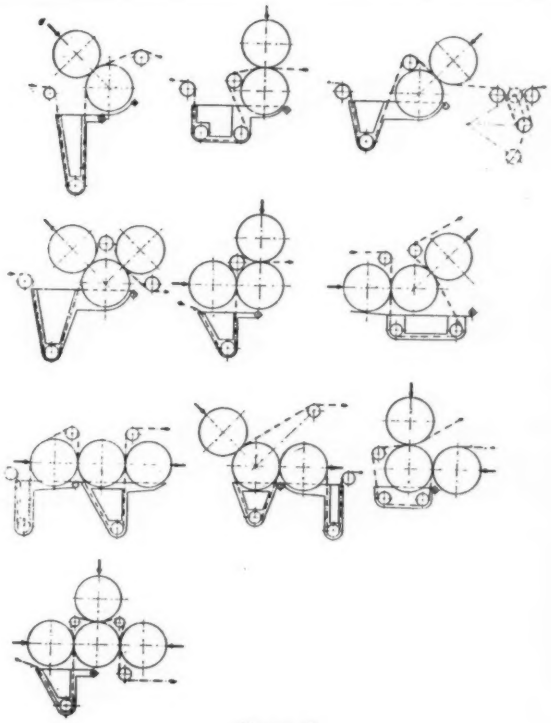


Figure 2

Today's diversified operations in the textile coloring and finishing field call for the utmost in flexibility. Most plants, especially the smaller ones, require machinery that can be changed over by the operator without any help from the machine shop personnel; this is the requirement that this new machine is designed to fill.

It can be changed from its form, shown in Figure 1 as a two-roll mangle, to a padder provided with three or four rollers in all imaginable arrangements, as shown in Figure 2. It can be used alone or in train with other machines to carry out continuous operations of dyeing or finishing.

A maximum pressure between the rollers of 6000 kg/cm is controlled by pneumatic pressure. As the rollers are all provided with ball bearings the power requirement is comparatively small. The diameter of the squeeze rolls is 350 mm. Troughs of varying form are furnished for the different arrangements of rollers.

The name of "Universal" for this device seems appropriate.—*Suleyman Somay.*

Coloring the New Fibers; Fiber Resistance to Dyeing

Anon, *Dyer* 120, 123-9, 258-66, July 18 and August 15, 1958

"In the last 20 years, we have seen almost a revolution in dyeing, and one that not every dyer has looked on with favor. New fibers have come along and have been marketed with intense enthusiasm, despite the reluctance of some to take up dyestuffs in any way at all, and despite the impossibility of dyeing them by orthodox methods."

The reason for the poor dyeing properties of the new synthetic fibers, the writer points out, is that they are very short of chemically reactive groups such as are present in the natural fibers (eg, hydroxyl in cotton and flax, and carboxyl and amino groups in wool and silk).

The author first discusses the main devices that have been adopted to color the difficult-to-dye fibers; these include the addition of carriers, pressure dyeing, and the use of copper catalysts (cuprous ions) for some acrylic and vinyl fibers.

The two most important ways of coloring fibers, apart from dyeing, are mass coloration in spinning (dope dyeing) and the application to fabrics of a pigment, which is held to the fabric by a resin.

Within the last ten years very large quantities of viscose and acetate rayons have been spun from pigmented dope. Fastness has usually been excellent and cost has been, as a rule, a little less than that of dyeing fabric made from uncolored yarn by usual methods to the same degree of fastness. In dope-dyeing nylon and Terylene, however, a new difficulty presents itself: the pigment must be stable at the spinning temperature, which is close to 300°C. Pigments for this purpose must be carefully selected. At present, dope-dyed nylon, Orlon, Dynel and Saran are said to be available in the U S. The chief objection to dope dyeing, from the textile manufacturer's standpoint, is that he is required to carry in stock large quantities of variously colored yarns.

There are various ways of attaching pigments to a fabric by means of a resin. It is difficult to avoid having the applied resin affect the hand of the fabric; and since the dye is all on the surface of the fiber, it can be "scrubbed off". However, considerable quantities of Orlon fabric have been colored by pigment padding, it is said, as well as somewhat smaller quantities of nylon and Terylene.

The author points out that the simplicity of molecular structure and lack of reactive groups, which characterize the synthetic fibers, make possible their very high tenacity and resistance to chemical and biological attack. When the structure of the fiber is opened up to permit the entry of water and dye molecules, the penetration of other agents is facilitated, and the result is a marked deterioration in chemical and biological resistance. There is also a drop in tenacity.

Caprolan (nylon 6) is stated to have more amino groups on the free ends of its molecular chains than ordinary nylon 66. This accounts for its greater affinity for acid dyes. Other synthetic fibers having good affinity for dyes are Courtelle and Acrilan, both said to be copolymers of acrylonitrile and other ingredients.

The writer cites several patented processes for imparting affinity to fibers. He gives a brief account of the new cationic (basic) dyes for the acrylic fibers, and also the "reactive" dyes for cellulose fibers.

Staining of Hydrophobic Fibers During Application of Vat Dyes to Cotton

Anon, *Dyes & Chem Tech Bull (du Pont)* 14, 66-8, June, 1958

Since hydrophobic fibers are being used in a wide variety of fabric constructions, information concerning their dyeing or staining characteristics is always of timely importance.

A recent investigation to determine the staining of spun Dacron polyester fiber, Orlon acrylic fiber, filament nylon, spun nylon and filament Arnel triacetate fiber, used as effect threads in cotton suiting dyed with vat dyes, provides valuable reference data.

Forty-three different vat dyes were applied to the fabric containing effect threads of these five man-made fibers, at 1.0 oz/gal by the Du Pont pad-steam continuous dyeing process. At higher concentrations of the vat dye the stain may be greater than shown in the accompanying table, but the contrast would also be greater.

The degree of staining of each fiber is rated on a 1 to 5 basis for each of the 43 dyes. While the results vary from dye to dye, in general Dacron, Orlon and Arnel show little or no staining, while nylon, both filament and spun, is heavily stained by most dyes, and in a few cases is actually dyed.

A Wear Study of the Serviceability of a Minimum-care Garment. 1) Subjective Evaluation. 2) Laboratory Evaluation.

Morris, M A and Wilsey, B, *Textile Research J* 28, 881-91, Oct, 1958.

Men's gabardine slacks made from 65% Dacron and 35% rayon fabric were worn a total of 750 hours. After every 50 hours of wear, one-half of these garments were drycleaned and one-half home laundered. The garments were evaluated by both the wearers and members of the research staff (at the California Agricultural Experiment Station) after each wear period and after each cleaning.

The slacks used in this study were found to be generally serviceable during wear. In only a few cases were they rated by either the wearers or the staff as being unacceptable for any property evaluated. The drycleaned garments received higher staff and wearer ratings more often than did the laundered garments.

The garments were not found to meet the requirements of a wash-and-wear or minimum-care item, as described in the literature (*Am Dyestuff Reptr* 45, 548-50, 1956; *Textile Research J* 26, 974-80, 1956), since loss of crease and seam puckering, resulting from home laundering, necessitated thorough pressing after each washing.

The authors found that some of the wearers were consistently harder on their garments than were others.

In the laboratory tests, physical measurements were made on garments made from a minimum-care Dacron/rayon blended fabric to de-

termine the effect of maintenance and wear on serviceability. Of the garments tested, 25 had been worn and home laundered; 25 had been worn and commercially drycleaned; and 15 had been drycleaned without being worn. The tests included crease recovery, yarn strength and elongation, resistance to abrasion, and dimensional stability.

The results of these laboratory measurements and the subjective evaluations of the garments were in general agreement. The fabric was not found to be deficient in any physical property measured.

Loss of fabric stiffness was the difference most frequently observed by the wearers between the laundered and drycleaned garments. Degradation due to wear was negligible as measured by both subjective and laboratory methods.

The authors suggest that the elimination of seam puckering and improvement of crease retention after home laundering would greatly improve the serviceability of these minimum-care garments.

Non-apparel Applications of Viscose Rayon

Howsmon, J A, *Textile Research J* **28**, 805-10, Sept, 1958.

Viscose rayon when first introduced was principally used in the production of apparel fabrics. In the middle 1930's, almost 90% of all rayon produced went into this field. Since the appearance of the synthetic fibers in 1940, the rayon manufacturers have been obliged to find new uses for their product outside of the apparel market. As a result, in the middle 1950's only 35% of the rayon production was used in apparel; the other 65% found industrial, tire and house-furnishing uses.

The viscose rayon fiber has been improved in both strength and dimensional stability by stretch spinning; and also a new chemical process modification, using zinc sulfate in the spinning bath, has resulted in still stronger and tougher fibers, particularly suitable for tire cord. These "super rayons" are said to have exceptionally high tenacity, high elongation, higher impact strength, longer fatigue life and low swelling. They are more resistant to soiling, and have higher abrasion and wear resistance than conventional rayon fibers. The strength of tire cords produced from these new yarns has increased approximately 40%.

In addition to tires, yarn of this type is finding increasing use in such diverse places as conveyor belts, V-belts, industrial sewing thread, abrasive wheels, polishing wheels, sanding disks, safety belts, packing tapes, and reinforcement for paper and plastics. Other anticipated uses are in hose and in duck fabrics for tarpaulins and tents.

Rayon is finding wide acceptance in the rapidly growing nonwoven fabrics field, due largely to its controlled length and product uniformity.

A fibrillating rayon has been produced which is expected to find applications in the paper industry.

Steady improvement has been made in the properties of rayon carpets, such as improved wear and soil resistance.

The present trends indicate that the synthetic fibers will continue to replace rayon fibers in some areas, but that these same synthetics will extend the use of viscose rayon fibers into other fields, since the properties of cellulosic and synthetic fibers complement each other to a great extent.

Recent Advances in the Industrial Use of Synthetic Fibers

Swanson, J M, *Textile Research J* **28**, 755-61, Sept, 1958.

End-use and development work on improved yarns, tailored to meet specific industrial needs, are broadening the use of synthetic fibers in industrial applications.

Nylon is rapidly gaining favor as a reinforcing fiber for tires. In 1957, about 85 million pounds of nylon were used in passenger, truck, airplane and off-the-road tires, an increase of 35% over 1956 figures, and about one-third of the total tire yarn market, expressed in nylon units. The reason for this trend, the author states, lies in the performance advantages of nylon tires compared with rayon.

The apparatus employed in the du Pont industrial laboratory for testing these yarns is described in great detail.

An improved nylon has been developed for tires, which is stronger, tougher and more resistant to degradation at high temperatures than ordinary nylon.

Dacron, due to its strength, toughness and moisture resistance, has found a use as a reinforcing fiber for V-belts. For this application a special adhesive had to be developed.

The market for coated nylon fabrics, for light-weight, durable protective coverings, has grown rapidly over the past five years, but vinyl-coated fabrics have given trouble due to poor adhesion of the coating. Recently a vinyl plastisol-coated nylon fabric has been developed, using an open-mesh weave sandwiched between two sheets of vinyl film. This permits bonding of vinyl to vinyl through holes in the fabric. An adhesive has also been developed by du Pont which can be used to laminate vinyl films to tightly-woven fabrics also.

Synthetic fibers are also gaining favor in rope, fire hose, fish nets, sewing thread, bearings, valve packing gaskets and filters.

Arnel-Dacron Wash-and-Wear Fabrics

Elsom, H F and Westarp, T W, *Modern Textiles* **39**, 40-4, Oct, 1958.

For selected end uses such as men's slacks, utility clothing, service uniforms and men's suitings which require extra strength and durability, the use of relatively low percentages of Dacron polyester fiber in blends with Arnel triacetate fiber can result in serviceable wash-and-wear fabrics. In some instances, a third fiber such as cotton or rayon in blends with Arnel/Dacron is desirable, since the presence of cellulosic fiber permits the application of special resin finishes, thus making possible a variety of desirable hands.

The authors state that about 30-35% Dacron in the blend with Arnel is necessary in light-weave fabrics to increase the yarn strength, while 15% Dacron in the blend will yield fabrics with resistance to abrasion similar to that of all-cotton fabrics used for men's slacks.

Blends of Arnel with Dacron may be dyed in the jig or the winch, or on the beam, using temperatures above 212°F. Dyeing by either method, it is important to choose dyes which will yield a balanced affinity between Arnel and Dacron. The authors list a number of disperse dyes which have been found suitable for this purpose. Two dye accelerants, Dysyn 427A and Latly Carrier A, are recommended for dyeing at 203° F. These accelerators increase the dye absorption of Dacron at the expense of Arnel and thus assist in obtaining solid union dyeings.

In high-temperature dyeing, solid shades on Arnel/Dacron can best be obtained at 230°F. Below 230° the Arnel dyes heavier, while above 230° the Dacron is deeper.

If cotton or rayon is in the blend, it may be subsequently dyed to either the same shade or a contrasting one by the use of an appropriate direct dye that does not stain acetate.

After dyeing, the fabric is heat-treated to a temperature of 380-390°F and is subsequently rope washed and frame dried. Heat treatment serves four useful purposes: it stabilizes the fabric; it reduces pilling tendency; it improves the degree of

color washfastness on Arnel; and it makes the dyeing more solid by deepening the shade on Dacron.

Arnel/Dacron blended fabrics are said to have good durability, require little or no ironing after washing, and resist wrinkling.

Cavitomic Cotton

Guggenheim, G, *Textile Bull* **84**, 106-9, Sept. 1958.

The name "cavitomic cotton" applies to certain cottons which suffer deterioration during storage, resulting in increased fiber breakage during processing, a decrease in spinnability, and a lowering of evenness and strength.

It is believed that cavitomic cotton results from microbiological action on the fiber during the critical period between the opening of the cotton boll and the drying out of the fibers. The fungi attack the cotton while it is still in the field, but the actual damage takes place after it is put in the warehouse. The longer it is stored, the greater the fiber damage will be.

Some of the symptoms present in cavitomic cotton are high alkalinity, low sugar content, and (under the microscope) fibers damaged by fungus growth.

With certain precautions, cavitomic cotton can be run through the mill without seriously affecting running conditions or yarn quality. Affected bales should be blended in low percentages (not over 15%) with good bales. The amount which can be blended satisfactorily depends on the extent of fiber damage.

Five references to the literature are cited.

Textile Labeling Bill Passed

Anon, *Textile Organon* **29**, 177-8, Oct, 1958.

On Sept 2, President Eisenhower signed into law the Textile Fiber Products Identification Act (H R 469). The Act requires that, in labeling a textile fiber product, each natural or man-made fiber in the product must be designated by generic name in order of predominance by weight, provided that the weight of such fiber is at least 5% of the total weight of all fibers in the product. When a fiber or group of fibers is present in an amount less than 5%, they may only be designated as "other fiber" or "other fibers," and not by the generic name nor the trademark of such fiber or fibers. Every manufacturer and labeler of such products must keep records to show the fiber content, as required by the Act, for a period of at least three years.

The Act applies to all textile products entering interstate commerce, and thus imported textile goods are included in the measure's coverage; further, the name of the country in which the textile was processed or manufactured must be given.

While the coverage of the new Act is broad, there are several major exceptions, as follows: new material used as upholstery stuffing, outer coverings of furniture, mattresses and box springs; linings or interlinings and filling or padding, used primarily for structural purposes and not for warmth; stiffenings, trimmings, facings or interfacings; backings and paddings to be used under floor coverings; sewing and handicraft thread; bandages, surgical dressings, etc, as covered under the Food, Drug and Cosmetic Act of 1938; waste materials not intended for use as a textile fiber product; textile fibers used in the manufacture of footwear; and headwear, handbags, luggage, toys, lampshades, diapers, etc.

After excluding these exceptions, the Act requires the above-described labeling of wearing apparel, costumes and accessories, draperies, floor coverings, furnishings, bedding and other textile goods customarily used in the household, plus wool floor coverings, wool mats, and any other wool products not now covered by the Wool Products Labeling Act of 1939. Also to be labeled is reused stuffing used in any upholstered product, mattress or cushion.

The new Act, which goes into effect 18 months from the date of its signing, will be enforced by the Federal Trade Commission.

Finishing Nonwoven Fabrics

Anon, *Textile World* **108**, 44, July, 1958

Nonwoven fabrics that are destined for other than disposable purposes can be dyed, printed, embossed and finished on ordinary dyehouse equipment; but because nonwovens as a class do not have the tensile strength or drape associated with woven fabrics, it is necessary to process them in the open width at lower tensions than can be used on the woven fabrics.

The great bulk of nonwoven fabrics that go into interlinings, upholstery backing, insulation, and coated materials are finished when they come off the production machines on which they are formed.

Two broad classes of nonwovens can be defined. In one case, the fabric is held together by an added binder. The other class is bound together by thermoplastic fibers mixed in the blend, which are plasticized by passing the web through heated rolls or an oven. When the web cools, the thermoplastic fibers bind the mass together.

For many purposes, color can be added to the binders. However, there are limitations to coloring by this method.

If deep shades of good all-round fastness are necessary, it is possible to dye nonwovens on the jig, but they should be strong enough to withstand moderate tension. In any case, tensions must be kept to a minimum, and modern jigs with spreaders are a necessity to avoid warpwise creasing.

Nonwovens can also be dyed in becks, provided that they are not permitted to fall into rope form. For cellulosic fibers, direct, sulfur and vat dyes can be used. Mixed-fiber nonwovens that use a thermoplastic fiber as a binder may require disperse or acid colors to tint these fibers.

Dyed nonwoven fabrics can be dried in loop dryers or any other dryer in which tensions are low.

Considerable yardage of these fabrics is now being printed on conventional roller printing machines. Pigments are largely used to produce the printed designs, but dyes are practical when they are suitable for the fibers involved. Screen-printing methods are also used.

To overcome the poor drape of the nonwovens, it is possible to work the fabrics in the open width in a beck with a softener added to the bath.

Nonwoven fabrics are being used in great quantities in automobile upholstery items such as door paneling, scuff pads and seat bolsters. Several car manufacturers are using these fabrics as backings for vinyl sheets. Various methods for combining the nonwoven fabric to the vinyl sheet are described.

Ultraviolet Absorbers

Coleman, R A and Peacock, W H, *Textile Research J* **28**, 784-91, Sept, 1958.

The ultraviolet light with which this paper is concerned is a small invisible portion of sunlight (only about 5%) which is believed to be most responsible for the destructive action of sunlight exposure, such as the fading of dyes, the yellowing and embrittlement of plastics, and the sun tanning of human skin. This photodegradation is not, however, due wholly to the ultraviolet light, since the visible light contributes somewhat to the destructive effect.

To protect against these energies, screens (optical filters) can be used. The authors have made an ultraviolet screen of cellulose acetate film (which alone has very little absorption) containing 0.55% of 2,2′-dihydroxy-4-methoxybenzophenone. This film was designed to absorb strongly in the

ultraviolet region and to transmit highly in the visible region. Duplicate Fade-Ometer exposures were made of 81 direct cotton dyeings and 71 wool dyeings, one set covered with this protective screen and the other with clear cellulose acetate film. The results of these exposures are tabulated.

The improvement in lightfastness caused by the protective screen varied from dye to dye but was very considerable in many cases. It was noted that those dyeings most improved by the protection are the ones that normally have the highest lightfastness ratings. In general, the lightfastness of dyeings fugitive to visible light cannot be greatly improved by screening out the ultraviolet radiation.

Since the Fade-Ometer carbon arc emits light that is richer in ultraviolet radiation than sunlight, many of the direct cotton dyeings were also exposed in a similar manner to the sun in Arizona. The data obtained from these sunlight exposures were found to correlate qualitatively with the data from the Fade-Ometer exposures, but the dyeings were more sensitive to the visible portion of sunlight than to the visible portion of the Fade-Ometer light.

Not only are dyes sensitive to light, but many of the fibers also are weakened by exposure to sunlight. After four months' exposure in either Arizona or Florida, the loss in tensile strength of cotton was greatly reduced by screening out the ultraviolet.

Similarly, the loss in the tensile strength of nylon cloth exposed for two months in Arizona and Florida is lessened appreciably by protecting the nylon from ultraviolet light. In nylon, however, there appears to be considerable damage caused by visible light or other factors, as shown by a 40-61% drop loss (in two months) found even behind the ultraviolet absorbing film.

All these data, along with those of other investigators, indicate the desirability of preventing ultraviolet light from reaching dyes and fabrics.

The authors describe a number of organic compounds which have been found suitable as ultraviolet light absorbers. They point out that chemical compounds suitable for this use must have these two properties: strong absorption of ultraviolet light, and also good stability to this light.

The authors state that the application of ultraviolet absorbers to textiles has not yet been explored very thoroughly. Several possible methods of application are proposed.

Four references to the literature are cited.

Man-made Fiber Definition

Anon, *Textile Organon* **29**, 162-3, Sept, 1958.

Early in August, Congressional approval was given to a bill (HR 10277) which provides a new statutory definition of "rayon and other synthetic textiles" for use by the Customs Bureau; the bill subsequently was signed by Pres. Eisenhower. The Senate Finance Committee had determined that a new definition was necessary to cover filaments or fibers which presently exist or which may be developed; the new definition does not affect existing tariff rates, however.

Under the new definition, rayon and other synthetic textiles are defined as any fiber, filament or fibrous structure, and any band or strip, suitable for the manufacture of textiles, not over 1" in width, all, whether formed by extrusion or other processes, from substances derived by man from cellulosic or non-cellulosic materials by chemical processes such as, but not limited to, polymerization and condensation.

This new definition does not include fibers, filaments, fibrous structures, or bands and strips of glass or other nonmetallic mineral, or of metal, paper or natural rubber.

The Dyeing of Acrilan Acrylic Fiber

Hadfield, H R and Sokol, W M, *J Soc Dyers Col* **74**, 629-40, Sept, 1958

During the last twelve months considerable quantities of Acrilan have been processed by the textile industry in Great Britain, and this has enabled the dyeing techniques, initially formulated in the laboratory, to be reviewed in the light of practical experience. Below are some of the comments.

Acid dyes were found to be very difficult to apply level to yarn and cloth, and the high quantities of acid required usually had a detrimental effect on the desirable hand of Acrilan. Nevertheless, acid dyes are being used with satisfaction for certain purposes.

Acid-levelling metal-complex dyes require high concentrations of sulfuric acid, and the levelling properties are poor. The absence of a fast-to-light blue dye for use in pale and medium depths is a serious limitation.

Neutral-dyeing metal-complex dyes are not as satisfactory on Acrilan as on wool, due to lower fastness to wet treatments, poor building-up properties, poor penetration of the fiber, and possible demetallization by the sulfuric acid required. However, for the production of fast pale colors on loose fiber or slubbing they are of considerable value if dyes are carefully selected.

Mordant dyes are of no value for yarn or cloth, but in very heavy depths, selected after-chrome dyes can be used to dye loose fiber or slubbing with excellent fastness.

The present range of Procion and Procion H dyes is not generally of value for dyeing Acrilan. The poor levelling properties of these dyes is a disadvantage.

The use of basic dyes is limited to those cases where, from shade considerations, no alternative is possible.

With this experience it was decided

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to re-examine the various classes of dyes, compare the fastness properties obtained, and then assess the results.

A pale, a medium and a heavy gray were dyed on Acrilan, using the optimum dyeing conditions, with the following classes of dyes: disperse, acid, chrome, and 2:1 metal-complex. It was found that chrome dyes were applicable to Acrilan by after-chroming but were not suitable for application on a mordant or by the chromate method.

The dyeings were then tested for fastness to various agencies. Full details of these experiments are given, and the results are tabulated.

The authors point out that when dyeing Acrilan it must be remembered that the fiber is plastic when immersed in boiling dyebaths, and care should be taken, in cooling down before rinsing off; and when package-dyeing in a machine with a circulating pump, to avoid the use of high pressures; and to avoid tensions in yarn dyeing or piece dyeing if the handle or the dimensions of the fiber are not to be seriously altered.

The authors conclude that, provided that the right type of machinery is available, 100% Acrilan can be dyed in a wide variety of shades with entirely adequate standards of fastness. They state, however, that it is wrong to regard Acrilan as a fiber which, from the dyeing viewpoint, behaves like wool. Generally, disperse dyes are the most attractive, although for specialized purposes selected azoic, acid, basic, after-chrome, metal-complex and reactive dyes may be found of value.

Sixteen references to the literature are cited.

Structure and Application of Naphthol AS

Hueckel, M, *Can Textile J* **75**, 57-65, April 18, 1958 (An abridged version, entitled "Recent Developments in the Application of Azoic Dyes", was published in *J Soc Dyers Col* **74**, 640-6, Sept, 1958).

This excellent paper is concerned with recent knowledge of impregnation with Naphthol AS and of coupling conditions. Influence of the type of alkali in the impregnation bath on the dyeings and on the rate-of-absorption curves of various coupling components is discussed. The chemistry of the coupling of azoic combinations on vegetable fibers is outlined, and practical aspects of the buffering of the developing baths are considered. The base printing style also is briefly described.

In discussing the impregnation with Naphthol AS plus formaldehyde, the author states that increasing the caustic soda concentration decreases the depth of the dyeings produced when developed with Fast Color Bases and Salts. However, in the case of Naphthols whose formaldehyde compounds have good solubility, if the excess of caustic soda solution in the salt-containing bath is replaced by soda ash, very deep dyeings are obtained. The application of this principle to the different Naphthol brands is discussed in considerable detail.

Referring to the developing operation, the author divides the various Fast Color Bases and Salts into four groups according to their coupling energies ("high", "medium", "low" and "very low"); each group is further subdivided into "rapid", "medium" and "slow" coupling rate.

Recommendations are made regarding the use of buffers in each of these four groups. The author points out that there is no universal buffer, and that it is necessary to select the proper one to meet the requirements of each diazo component. Tables are included showing the pH values obtained with the buffers most commonly used in Naphthol AS dyeing practice.

Ten references to the German literature and patents are cited.

Static Electrification of Textile Goods and Use of Antistatic Treatment

Dorset, B C M, *Textile Mfr* **84**, 468-72, Sept, 1958

Most of the "static" troubles which have in recent years acquired much increased importance in connection with textiles arise from the simple phenomenon that when two surfaces are brought together, some electrically-charged particles pass from one surface to the other, so that on separation the surfaces acquire a positive or negative charge whose magnitude and permanence are governed by the existing circumstances (eg, the relative humidity of the air and the conductivity of the fibers).

When textile yarns and fabrics acquire static charges, their manufacture and processing become more difficult. The increasing use of synthetic fiber materials, which are especially liable to develop these charges, due to their low moisture absorption, made it necessary to investigate how such static electrification can be prevented.

The author discusses various expedients for counteracting the harmful effect of static. One method used in textile plants is to employ an electric discharging device to ionize the surrounding air, so that the static is dissipated as fast as it is formed. The textile material may be made electrically conducting by applying to it a suitable substance, or by chemical modification of the fibers so that they acquire a permanently higher moisture content.

Obviously it is necessary to have some means of testing the efficiency of an antistatic agent or treatment in the laboratory. One device found suitable measures the magnitude of the electric charge produced on a textile material by rubbing it against another material under standard conditions. Another apparatus measures the electrical resistance of a textile material. Apparatus of this sort, devised by Hayek and Chromey of the Du Pont Jackson Laboratory (*A D R* **40**, 164, 225, 1951) is described in detail.

The author discusses the proper selection of antistatic agents for use in the various textile manufacturing processes. He points out that the conduction of electricity along a textile fiber is mainly a surface phenomenon, so that merely coating of each fiber with an electrically conducting film is all that is necessary.

A number of antistatic products, both permanent and nonpermanent, are described, with references to the patent literature.

General Calendar

AMERICAN ASSOCIATION OF TEXTILE TECHNOLOGY
Jan 7, Feb 4, Mar 4, Apr 1 (Della Robbia Room, Hotel Vanderbilt, New York, NY)

AMERICAN COTTON MANUFACTURERS INSTITUTE
Mar 19-21 (Annual Convention — Palm Beach Biltmore Hotel, Palm Beach, Fla)

AMERICAN OIL CHEMISTS SOCIETY
April 20-22, 1959 (Roosevelt Hotel, New Orleans, La; Sept 28-30, 1959 (Statler Hotel, Los Angeles, Calif)

CANADIAN ASSOCIATION OF TEXTILE COLOURISTS AND CHEMISTS (QUEBEC SECTION)
Dec 13 (McGill Univ, Montreal, Que); Jan 30 (joint meeting with Textile Society of Canada Eastern Div, Ritz Carlton Hotel, Montreal); Feb 21, Mar 21, Apr 18 (McGill Univ, Montreal, Que); June 20 (Annual Golf Tournament)

THE FIBER SOCIETY
April 29-30 (Fontana Village, NC)

SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION OF THE UNITED STATES
Dec 3, Jan 13, Feb 10, March 11 (Luncheon meetings at the Hotel Roosevelt, New York, NY)